



Department of Agriculture

HP Crop Diversification Promotion Project (Phase II), JICA-ODA

State H.Q. Agriculture Complex, Hamirpur Distt Hamirpur, H.P.-177001

Telefax: 91-1972-223059

e-mail: pmucdp-hp@nic.in



No. Agr. H(B) 17/Meeting/2011-Vol.-VI-3705-3712

Dated: Hamirpur, the 03 MAR 2025

From:

The Project Director
HPCDP (Phase-II), JICA-ODA,
Hamirpur, Distt. Hamirpur (H.P.)

To:

1. The Principal Secretary (Finance), Govt. of H.P. Shimla-2.
2. The Secretary (Agri.), Govt. of H.P. Shimla-2.
3. The Vice Chancellor, CSKHPKV, Palampur, H.P.
4. Representative of Ministry of Agriculture & Farmers Welfare,
Room No. 108, B wing Shashtri Bhawan, New Delhi-110011.
5. The Director of Agriculture, Govt. of H.P. Shimla-5.
6. The Advisor Planning, Govt. of H.P. Shimla-2.
7. The Managing Director, H.P. State Agriculture Marketing Board, Khalini, Shimla-2.
8. The Executive Director, SPNF, Directorate of Agriculture, Shimla-5.

Subject: Minutes of the 1st Governing Council (GC) meeting of Himachal Pradesh Agriculture Development Society (HPADS) for HPCDP, Phase-II held on 11th February, 2025.

Sir/Madam,

I have the honour to enclose herewith the minutes of the 1st meeting of Governing Council (GC) of "Himachal Pradesh Agriculture Development Society (HPADS)" constituted for implementation of "H.P Crop Diversification Promotion Project (HPCDP) JICA-ODA Phase-II" held on 11th February, 2025 under the Chairmanship of Hon'ble Agriculture Minister, Govt. of Himachal Pradesh for favour of information and necessary action, please.

Yours faithfully,

Project Director-cum-
Member Secretary (GC of HPADS),
HPCDP (Phase-II), JICA-ODA,
Hamirpur, Distt. Hamirpur, H.P.

Dated: Hamirpur, the 03 MAR 2025

Endst. No. Agr. H(B) 17/Meeting/2011-Vol.-VI-3713-3714

Copy to:

- 1.) The PS to the Minister of Agriculture, Shimla-2 for information to the Hon'ble Agriculture Minister to the Government of H.P., please.
- 2.) The PS to the Secretary (Agri.) to the Govt. of H.P., Shimla-2 for favour of kind information of worthy Secretary (Agriculture).

Project Director-cum-
Member Secretary (GC of HPADS),
HPCDP (Phase-II), JICA-ODA,
Hamirpur, Distt. Hamirpur, H.P.

**MINUTES OF
1st GOVERNING COUNCIL COMMITTEE MEETING OF
HIMACHAL PRADESH AGRICULTURE DEVELOPMENT
SOCIETY (HPADS)**

Tuesday, February 11, 2025 at 11.30 AM

VENUE

Ellerslie Committee Room, Ellerslie Building, Shimla-2



**HIMACHAL PRADESH CROP DIVERSIFICATION PROMOTION
PROJECT PHASE-II, JICA-ODA, HAMIRPUR
DISTRICT HAMIRPUR (H.P.) – 177001, INDIA**

CONSTITUTION OF THE GOVERNING BODY/ COUNCIL

1.	Agriculture Minister, Himachal Pradesh	President
2.	ACS/Pr. Secretary/ Secretary (Agr.) to the Govt. of H.P.	Vice President
3.	ACS/Pr. Secretary /Secretary (Finance) to the Govt. of H.P.	Member
4.	Advisor (Planning), H.P.	Member
5.	Chief Project Advisor, State Project Management Unit	Member
6.	Director of Agriculture, H.P.	Member
7.	Representative of Ministry of Agriculture & Farmers Welfare, DAC, Govt. of India	Member
8.	Vice Chancellor, CSKHPKV, Palampur, H.P.	Member
9.	Managing Director, H.P. State Agricultural Marketing Board	Member
10.	Executive Director (SPNF)	Member
11.	Project Director, State Project Management Unit	Member Secretary



INDEX

Agenda Item No.	Description of Agenda Items
1.1	Financial approval of the Expenditure incurred in Phase-II of HPCDP
1.2	Status of audit reports/ financial review reports till 2023-24
1.3	Annual Reports up to FY 2023-24- Approval thereof.
1.4	Approval of i) Project Operational Manual ii) Operation & Maintenance Manual for HPCDP Phase-II
1.5	Proposal for Re-appropriation of funds to Strengthen Farm Based Livelihood Activities and Post Harvest Management Interventions, with in the Overall Project Outlays
1.6	Establishment of Block Project Management Unit (BPMU), Jawali, Distt. Kangra under District Project Management Unit, Kangra at Palampur under HPCDP (Phase-II)
1.7	Approval of Cost Norms for different workshops, trainings, seminars & exposure-cum-study visits and meetings
1.8	Approval of fund utilization by H.P. State Agricultural Marketing Board (HPSAMB)
1.9	Agenda for ratification of on file approvals accorded by the Chairman, Governing Council, HPADS.
1.10	Any other item with the permission of the chair.



Minutes of the 1st Meeting of Governing Council (GC), Himachal Pradesh Agriculture Development Society for HP Crop Diversification Promotion Project, Phase-II held on 11th February, 2025 at 11:30 AM in the Ellerslie Committee Room, Ellerslie Buildings, H.P. Secretariat, Shimla under the Chairmanship of Prof. Chander Kumar, Hon'ble Agriculture Minister, Govt. of Himachal Pradesh-cum-President, Governing Council of the HPADS.

List of the participants is given as under: -

Sr. No.	Name & Designation
1.)	Naresh Thakur, Managing Director, HPSAMB & SPD SPNF
2.)	Ram Adhin Singh Patel, Additional Commissioner, NRM/ RFS Division, Ministry of Agriculture & Farmers Welfare, Govt. of India (Online)
3.)	Jogi Ram Attri, Deputy Secretary (Agr.)
4.)	Mohinder Singh Bhawani, Deputy Director, SPNF
5.)	Anuj Kumar, Deputy Director (Planning)
6.)	Prof. (Dr.) Pankaj Sood, Associate Director of Research, CSKHPKV

At the outset, the Project Director, HPCDP, welcomed **Prof. Chander Kumar**, Hon'ble Agriculture Minister, Govt. of Himachal Pradesh-cum-President, Governing Council of HPADS; **Sh. Ram Adhin Singh Patel**, Additional Commissioner (NRM/ RFS Division, Ministry of Agriculture & Farmers Welfare, GoI); **Sh. Naresh Thakur**, Managing Director, HPSAMB -cum-State Project Director (SPNF); **Sh. Jogi Ram Attri**, Deputy Secretary (Agr.) to the GoHP; **Sh. Mohinder Singh Bhawani**, Deputy Director, SPNF; **Sh. Anuj Kumar**, Deputy Director (Planning); **Prof. (Dr.) Pankaj Sood**, Associate Director of Research, CSKHPKV and other participants of the meeting.

Thereafter, the Project Director presented following agenda items for discussion.



Agenda Item No. 1.1: Financial approval of the Expenditure incurred in Phase-II of HPCDP.

After signing of MoD on 3rd February, 2021 & the loan agreement on 6th March, 2021, the activities of Phase-II of the HP Crop Diversification Promotion Project are being implemented in the twelve districts of HP since June, 2021. The project envisaged to set up crop diversification models through providing irrigation infrastructures and other supporting activities in selected 296 subprojects scattered over twelve districts with the ultimate goal for improvement in livelihood and increasing the income of farmers.

The detailed component wise physical and financial achievements of the project (up to date) are attached as Annexure- "I" and summarized as under: -

(in Cr.)			
Sr. No.	Component	Financial Target	Financial Achievement (04.02.2025)
A.	Eligible Cost (Loan)		
1	Infrastructure Development	330.70	49.79
2	Farmers' Support Component	108.50	12.08
3	Value Chain & Market Development	63.30	41.71
4	Institutional Development	157.50	36.14
a.	Price Escalation	56.90	-
b.	Contingency	35.80	-
c.	Consulting Services	54.60	9.68
	Sub Total	807.30	149.40
B.	Non-Eligible Cost (State Share)	203.30	31.39
	Total (A+B)	1010.60	180.79

It is submitted that upto 4th February, 2025, the project has expended ₹ 180.79 Cr. out of ₹ 185 Cr. released, the consolidated activity-wise detail of which is submitted at Annexure- "I" for information, please. The EC of HPADS has already approved the expenditure in its 6th Meeting held on 5th February, 2025.

The GC is requested to accord financial approval for the same, please.

Decision / Remarks of the GC: -

The financial approval to the expenditure incurred worth ₹ 180.79 Crore accorded by the GC, hence, the agenda item dropped.



Agenda Item No. 1.2: Status of audit reports/ financial review reports till 2023-24.

The summary of audit observations appearing in the Audit Report of 2019-20, 2020-21, 2021-22, 2022-23 & 2023-24 is given at Annexure- "II" for information of the GC, please. Overall, 32 paras are pending up to FY 2023-24, of which annotated replies have been submitted to AG H.P. and paras are likely to be settled in the coming audit as are general in nature. The EC has also taken note of audit paras in its meeting held on 5th February, 2025.

Decision / Remarks of the GC: -

No remarks, updated information shall be presented in the next GC meeting.



Agenda Item No. 1.3: Annual Reports up to FY 2023-24- Approval thereof.

It is submitted that the Annual Reports of HP Agriculture Development Society for the FY 2021-22, 2022-23 & 2023-24 placed at Annexure- "III", "IV" & "V" have been approved by the EC in its 6th Meeting held on 5th February, 2025.

Submitted for consideration and approval of the GC, please.

Decision / Remarks of the GC:

The Annual Reports of HP Agriculture Development Society for the FY 2021-22, 2022-23 & 2023-24 were approved by the GC.

A handwritten signature in black ink, located at the bottom left of the page. The signature is stylized and appears to be a cursive representation of a name.

Agenda Item No. 1.4: Approval of i) Project Operational Manual ii) Operation & Maintenance Manual for HPCDP Phase-II.

It is submitted that the EC of HPADS in its 6th Meeting held on 5th February, 2025 has approved the Project Operational Manual and O & M Manual drafted by PMU in consultation with the PMC.

The manuals are annexed at Annexure- “VI” & “VII”, respectively, for perusal & approval of the GC, please.

Decision / Remarks of the GC:

The GC approved the **Project Operational Manual and Operation & Maintenance Manual**, as such.

A handwritten signature in black ink, located at the bottom left of the page. The signature is stylized and appears to be a cursive or semi-cursive script.

Agenda Item No. 1.5: Proposal for Re-appropriation of funds to Strengthen Farm Based Livelihood Activities and Post Harvest Management Interventions, with in the Overall Project Outlays.

It is submitted that the EC of HPADS has accorded its approval for reappropriation of funds to Strengthen Farm Based Livelihood Activities and Post Harvest Management Interventions, with in the Overall Project Outlays in its 6th Meeting held on 5th February, 2025.

This is in line with the directions given in the review meeting of Agriculture Department held under the Chairmanship of Hon'ble Chief Minister, Himachal Pradesh on 13th August, 2024, in-house consultation and review by PMC, briefing of Worthy Secretary (Agr.) to the GoHP & the advisory received from the donor agency i.e. JICA India.

The reappropriation of funds has been proposed by subsidizing/rationalizing provisions under Infrastructure Development, Farmer's Support & Institutional Development Components and revamping Value Chain and Market Development Component in line with the existing provisions of strengthening of HPSAMB by providing funds for Establishment of Warehouses/ Silos/ Set up of Potato Flakes/ Turmeric Processing Industry in Low Hill Zone of the State and HP MILKFED by providing funds for strengthening the post-production management infrastructure.

Besides this, under livelihood activity of Farmer's Support Component, more emphasis is being given to Dairy Sector and Service Sector. The support under Dairy Sector is being enhanced in terms of budgetary allocations, overall assistance (Cost Model -Attachment-I) & by extending support to all categories of beneficiary farmers.

After addressing the key observations of the donor agency i.e. JICA India, the revised provisions under different components shall be as under: -

Sr. No.	Component	Existing Provisions		Proposed Revisions	
		₹ in Crore	in Mil. JPY	₹ in Crore	in Mil. JPY
1	Infrastructure Development	330.70	4630.00	243.07	3403.00
2	Farmers' Support Component	108.50	1518.00	99.36	1391.00
3	Value Chain & Market Development	63.30	886.00	171.31	2398.00
4	Institutional Development	157.50	2205.00	146.26	2047.00
A	Price Escalation	56.90	797.00	56.90	797.00
B	Contingency	35.80	502.00	35.80	502.00
C	Consulting Services	54.60	764.00	54.60	764.00
	Sub Total	807.30	11302	807.30	11302
	State Share (Non-Eligible portion) 20%	203.30	2846.00	203.30	2846.00
	Total Project Cost	1010.60	14148	1010.60	14148

The activity wise detailed reappropriation is annexed at Annexure-"VIII" for perusal and approval of GC, please.

Decision / Remarks of the GC:

The GC approved the proposal for reappropriation of funds to strengthen farm-based livelihood activities and post-harvest management intervention within the overall project outlays.

The GC endorsed the decision of the EC that in order to achieve the retained physical targets under Micro Irrigation System (Drip & Sprinkler), funds from PDMC/PMKSY & any other similar programmes shall be provided to the HPCDP under convergence mode. In addition to this, the provisions of A. Price Escalation & B. Contingency in the project outlays, the scope of mobilising funds out of these provisions, if need be, was also observed, in view of the scheduled Mid- Term review during 2025-26. The GC had detailed discussion on the cost model of the Dairy Sector assistance to beneficiary farmers & gave its approval (Cost Model - Attachment-I).



Agenda Item No. 1.6: Establishment of Block Project Management Unit (BPMU), Jawali, Distt. Kangra under District Project Management Unit, Kangra at Palampur under HPCDP (Phase-II).

The GC is apprised that as approved/ ratified by the EC of HPADS in its 5th meeting, BPMU, Jawali, Distt. Kangra under DPMU Kangra at Palampur (Agenda Item No. 5.13.4) was established during November, 2023, and is functional with the approved revised staff strength (Annexure-“IX”). The GC is requested to endorse the approval, please.

Decision / Remarks of the GC:

The GC approved the establishment of BPMU Jawali along with revised staff strength of HPCDP (Phase-II).



Agenda Item No. 1.7: *Approval of Cost Norms for different workshops, trainings, seminars & exposure-cum-study visits and meetings.*

It is submitted that EC of HPADS in its 4th meeting held on 4th May, 2023 has approved Cost Norms for different workshops, trainings, seminars & exposure-cum-study visits and meetings, vide agenda item no. 14 (Detail at Annexure- "X"). The GC is requested to accord its approval for the same, please.

Decision / Remarks of the GC:

The GC approved the Cost Norms for different workshops, trainings, seminars & exposure-cum-study visits and meetings under HPCDP (Phase-II).



Agenda Item No. 1.8: Approval of fund utilization by H.P. State Agricultural Marketing Board (HPSAMB).

It is submitted that funds worth ₹ 31.01 Crore were approved to be utilized for the Modernising Facilities and Equipments in 13 Market Yards by HPSAMB, accordingly, the actual fund utilization detail has been approved by the EC in its 6th Meeting held on 5th February, 2025.

The same is placed before the GC for its approval, please.

Statement of HPCDP fund utilization for 'Modernising Facilities and Equipments' executed by HPSAMB

Sr. No.	Name of Sub Market Yard	Expenditure (in Lakhs)
1.	Sub Market Yard Kangra/ Jassor	122.32
2.	Sub Market Yard Kangra/ Passu	90.97
3.	Sub Market Yard Kullu & LS/ Chauribihal	285.00
4.	Sub Market Yard Kullu & LS/ Patlikuhal	45.00
5	Sub Market Yard Kullu & LS/ Khagsu	9.00
6.	Sub Market Yard Mandi/ Takoli	527.71
7.	Sub Market Yard Sirmaur/ Nohradhar	220.00
8.	Sub Market Yard Shimla & Kinnaur/ Tapri	185.11
9.	Sub Market Yard Sirmaur / Ghandoori	93.03
10.	Sub Market Yard Sirmaur/ Khairi	106.84
11.	Sub Market Yard Solan/ Solan	971.91
12.	Sub Market Yard Solan/ Wagnaghat	264.54
13.	Sub Market Yard Solan/ Kunihar	179.57
Total		3101.00

Decision / Remarks of the GC:

The GC approved the expenditure incurred by HPSAMB on the 'Modernising Facilities and Equipments' under 13 market yards. Hence, agenda item dropped.



Agenda Item No. 1.9: *Agenda for ratification of on file approvals accorded by the Chairman, Governing Council, HPADS.*

GC is requested to ratify on file approvals accorded by the Chairman, GC of HPADS for HPCDP Phase-II (detail given below)


Sr. No.	File No.	Subject	Remarks
1.)	HPCDPP-B015/8/2024 PROJ. DIR SPMU Hamirpur dated 29.02.2024	Appointment of Senior Consultant in HPCDP (Phase-II) JICA-ODA Hamirpur	Approved
2.)	HPCDPP-B003/a/2024 dated 10.01.2025	Regarding partial modification in term and condition of appointment of Sh. Rajeshwar Singh Thakur, Media Advisor in HPCDP (Phase-II) JICA ODA Hamirpur	Make remuneration and Terms & conditions of both consultants equal- Approved

Decision / Remarks of the GC:

The GC ratified the on-file approvals accorded by the President, Governing Council, HPADS as placed above.



Agenda Item No. 1.10: Any other item with the permission of the chair.

- The President, GC stressed upon the need for framing strategic exit protocols for the works taken up & works being executed under Phase-I & II of HPCDP, respectively. He shared his experiences of implementation of Indo German Changer Project in Kangra District during late 90's, wherein, similar kind of interventions focusing on development of rural livelihoods by community participation were taken up and how after the withdrawal of assistance and technical support by the executing agencies, the so-called livelihood interventions could not sustain. He highlighted the significance of exit strategy documentation and related financial arrangements in sustainability of the assets created in community participation mode.
 - He requested Mr. R.A.S Patel, Additional Commissioner, (NRM/ RFS Division, Ministry of Agriculture & Farmers Welfare, Govt. of India) to arrange for monitoring of project interventions along with provision of Corpus/Kitty Funds for operation & maintenance of the assets created under HPCDP (Phase-I & II).
 - He also inquired about the status of fund provision under Natural Farming by Govt. of India. The Deputy Director, Natural Farming informed that APOs have been submitted by the PIU to GoI & the fund release @ 90:10 is still awaited. The Chairman informed the house that the State Govt. has fixed MSPs for natural farming produce i.e. Wheat @ ₹ 4000/ qtl. & Maize @ ₹ 3000/ qtl.
 - The Additional Commissioner, Govt. of India appreciated the efforts made during Phase-I of the project in providing assured irrigation water for more than 4500 hectare area, diversification towards high value cash crops & increase in the income of the beneficiary farmers. He expressed his satisfaction on the progress made under Phase-II of the HPCDP, so far. He informed the house that periodic inspections of works being under taken by the project is carried out by Review Missions from the donor agency i.e. JICA India and the progress of the project are also monitored through review meetings, discussions, presentations & seminars/conferences.
 - He further informed that there is no provision, as such with Govt. of India for the creation of Corpus/Kitty fund for O & M related activities for the assets created under EAPs, however, DoA may formulate a proposal for seeking funds for O & M of the infrastructure developed under HPCDP and pose for funds under PMRKVY.
 - The President, GC further directed the project authorities to share with him, the details of the observations pointed out by the visiting reviewing missions/teams from GoI/ Donor Agency i.e. JICA India.
 - The Associate Director of Research, CSKHPKV, Palampur, on behalf of Hon'ble Vice Chancellor of the University, conveyed his gratitude towards Hon'ble Agriculture Minister, GoHP-cum-President, GC Of HPADS for providing requisitioned funds to the University for
- 

carrying out research & other related activities. He presented the progress made by the University out of JICA funds under Phase-II. While discussing the proposed revamping of Dairy Farming activities under the project, he apprised the house that sufficient cattle germplasm is available in the State & the need of the hour is to provide sufficient quantity of feed & fodder (mineral concentrates) to reduce the milk yield gap and harness the maximum potential out of the available cattle head in the State.

- The President, GC highlighted the importance of traditional farming and directed the representative of CSKHPKV, Palampur to strategize agro ecological situation specific research interventions *e.g.* peculiar dryland cultivation of vegetables being taken up by the farmers of Rehan/Nurpur/ Fatehpur areas (Anoh areas) of Kangra district during summer/ rainy season leads to availability of different cucurbitaceous vegetables at a time when the supply of these vegetables from the neighbouring states of Punjab & Haryana is inadequate. These practices enable the cultivators to fetch remunerative returns for their produce. Secondly, he directed the University representative to study the concept of growing paddy nursery on carpet/polysheet which facilitates easy plucking of the nursery along with reduced growing time period coupled with good & healthy nursery. He said that if this technology for paddy nursery raising is found advantageous, disseminate the same amongst the paddy growers of the State facilitating easy and less time-consuming plucking/uprooting of the paddy nursery.
- The Managing Director, HPSAMB appreciated the works taken up during Phase-I & II of HPCDP and he highlighted the issue of exorbitantly high prices of seeds/hybrids of exotic vegetables being grown in the State. To this, the Chairman directed that the SAU should take up research activities on development of good quality hybrids of exotic vegetables so as to reduce the input costs for the farmers practising exotic vegetable cultivation.
- While taking stock of the progress of Shiitake Cultivation & Training Centre (SCTC), Palampur, the Chairman expressed his satisfaction and directed the project authorities to take steps for the popularisation of Shiitake in the State and explore the market linkages for this mushroom.
- The Hon'ble Agriculture Minister took note of the properties of the DoA & SAU all across the State with the understanding that urbanised population & high gentry appear to be inclined towards Agri eco-tourism, whereby they prefer to expedite such destinations alongwith their wards for recreation of the family in the lap of nature besides providing an opportunity for new generations to learn about farming, As such, it becomes imperative for the State to develop such properties with Agri eco-tourism point of view. He directed the concerned to explore the possibility of developing the University Farms, sub project areas of HPCDP & other suitable sites of DoA for such activities for financial strengthening of relevant institutions including the farmers.



The meeting ended with vote of thanks to & from the Chair.

Annexure "I"						
Physical & Financial progress report of On-Going EAPs JICA-ODA-Loan Project HPCDP (ID-P290) upto 4th February, 2025 (w.e.f. the effectuation of the Project)						
Components/Activities	Unit/ No.	Physical Targets & Achievements		Financial Targets & Achievements		
		Project Targets	Achievement Upto 4th February, 2025	Project Targets (Rs. In thousand)	Achievement Upto 4th February, 2025 (Rs. In thousand)	
1	2	3	4	5	6	7
1. Infrastructure Development Component						
1.1	Infrastructure development for sub projects					
1.1.1	Minor Irrigation			53 Nos. completed & 111 Nos. in progress	2210000	387961.817
1.1.3	Catchment Area Treatment				127000	1066.698
1)	Wire crates	No	189	5	32000	1066.698
2)	Silt Retention Structure	No	204	0	95000	0.000
1.1.4	Solar Pumping				88000	0.000
	Solar pannel with supporting fram, pump,motor,electrical pannel,Installation Of electrical devise and wires etc.	HP	1037.4	0	88000	0.000
1.1.5	Farm access Road				237000	0.000
	Cement Concrete Road W= 2.0-4.0m	KM	62.4	4.9	237000	20408.276
1.1.6	Solar/ electric fencing				130000	1668.025
1)	Solar electricle powered fencing	m	99795	0	72000	0.000
2)	Chain fencing with angle iron	m	29980	0	10000	0.000
3)	Chain fencing with RCC poles	m	19967	0	7000	0.000
4)	Composite fencing with welded mesh & solar power system	m	19948	1895	13000	1668.025
5)	barbed wire fencing with angle iron	m	98745	0	21000	0.000
6)	barbed wire fencing with angle poles	m	24783	0	7000	0.000
1.2	Crop Diversification through Convergence in created irrigation Schemes of IPH/ DOA					
1.3.2	Survey, Investigation, Design & Estimation	No		285	136200	86849.483
Total (1)					33,07,200	497954.299
2. Farmers' Support Component						
2	Farmers' Support Component					
2.1	Formation and strengthening KVA				29,000	7489.440
2.1.1	Awareness camp involving Community	No	306	289	2,000	1889.040
2.1.2	Formation and formalization of KVAs				12,000	3802.763
1)	Workshop of group to develop objectives and norms	No	612	348	2,000	1143.070
2)	Training to MC Members on role and responsibility	No	42	18	2,000	941.979
3)	Exposure visit of MC members to KVA in other area of HP	No	102	21	8,000	1717.714
2.1.3	Capacity development of KVAs for O&M Management				15,000	1797.637
1)	Workshop to discuss principal and practices of irrigation and water management	No	612	313	2,000	1027.407
2)	Training on techniques of water management	No	102	0	9,000	0.000

Components/Activities		Unit/ No.	Physical Targets & Achievements		Financial Targets & Achievements	
			Project Targets	Achievement Upto 4th February, 2025	Project Targets (Rs. In thousand)	Achievement Upto 4th February, 2025 (Rs. In thousand)
3)	Field training on basic engineering skills	No	612	128	4,000	770.230
2.2	Vegetable Promotion				6,62,100	24659.844
2.2.1	Incubation and capacity development of community motivators				80,000	0.000
1)	Engagement of Community Motivators	No	612	0	66,000	0.000
2)	Training on Institutional Development Processes	No	16	0	2,000	0.000
3)	Training on basics of irrigation management and enhancing agriculture production	No	32	0	3,000	0.000
4)	Training on promotion and strengthening of SHG (concept)	No	32	0	2,000	0.000
5)	Exposure Visits on Participatory Irrigation Management	No	32	0	6,000	0.000
6)	Peer Learning Interactions for Community Motivators	No	306	0	1,000	0.000
2.2.2	Farm Economy Management, Training on farm management by farm type (advanced, intermediate and conservative)				65,000	3583.386
1)	Orientation & Need Assessment	No	2754	467	8,000	1354.954
2)	Training on farm management and Bookkeeping	No	2754	427	8,000	1238.652
3)	Workshop of Farmres Group on cropping pattern arrangement	No	1224	27	49,000	989.780
2.2.3	Training cum method demonstration on Cultivation Practice of vegetable				1,24,100	574.181
1	Sub-projects having CCA less than 25 hacts(109no.)	No	6976	67	21,000	201.000
2	Sub-projects having CCA more than 25 hacts (187 nos +10 nos)	No	25216	46	76,000	138.000
3	Water saving and soil moisture conservation techniques	No	50	0	4,000	0.000
4	Promotion of Organic farming: Organic fertilizer application	No	50	0	2,000	0.000
5	Promotion of Organic farming: Organizing Kisan Mera and vegetable	No	10	0	1,000	0.000
6	Promotion of Organic farming: OPM and IPM: Training of farmers group	No	50	0	2,000	0.000
7	Promotion of Organic farming: OPM and IPM: Exposure visit to model farm	No	50	0	2,000	0.000
8	Promotion of Organic farming: Organic fertilzier preparation	No	50	0	2,000	0.000
9	Promotion of Organic farming: ICS and third party certificate for 3 years in	No	500	0	5,000	0.000
10	Promotion of post-harvest processing & marketing: Training/demonstration on	No	50	0	2,000	0.000
11	Promotion of post-harvest processing & marketing: Training on market	No	50	0	1,000	0.000
12	Promotion of post-harvest processing & marketing: Buyer and seller meet at	No	10	0	1,000	0.000

Components/Activities		Unit/ No.	Physical Targets & Achievements		Financial Targets & Achievements	
			Project Targets	Achievement Upto 4th February, 2025	Project Targets (Rs. In thousand)	Achievement Upto 4th February, 2025 (Rs. In thousand)
13	Pilot project for SHEP	No	112	-	5,100	235.181
2.2.4	Seed production and Demonstration (DOA)	No	1	-	26,000	8250.000
2.2.5	Food Grain's Productivity Training & demonstration	No	4896	237	15,000	783.883
2.2.6	Provision of Farm Machinery			-		11130.361
	Tractor / Power Tillers / Power Weeder					0.000
1	Tractors	No.	306	0		0.000
2	Power Tillers	No.	306	1		51.374
3	Power Weeder	No.	2016	131		4506.223
	Tractor/Power Tiller (Below 20 BHP) driven Equipment					
4	Land preparation / seed bed preparation	No.	306	0		0.000
5	Equipment for harvesting	No.	306	6		51.450
6	Chaff Cutter	No.	918	0		0.000
7	Grass Weed Slasher	No.	306	30		280.773
	Manual/Animal Drawn Equipment/Implements/Tools					
8	Land preparation / seed bed preparation	No.	306	0		0.000
9	Sowing and Planting Equipment	No.	306	94		6098.791
10	Harvesting & Threshing Equipment	No.	306	15		138.000
11	Post Hole Digger/Augur	No.	306	0		0.000
	Other Equipment					0.000
12	Manual Knapsack Sprayer	No.	612	0		0.000
13	Powered Knapsack	No.	612	5		3.750
14	Sprayer/Power Operated	No.	612	0		0.000
15	Taiwan Sprayer	No.	306	0		0.000
16	Eco Friendly Light Trap	No.	503	0		0.000
1)	Providing support to farmers on cost sharing basis (50:50) project share 50%	No.	1	-	2,38,000	0.000
2.2.7	Provision of poly houses & poly tunnels				84,000	338.033
1	Training cum method demonstration(low tunnels) for vegetable seedlings	No	1,184	63	6,000	338.033
2	Installation of walk in tunnels(10mtsX4 mts=1 unit): 2 units in the sub project	No	218	0	5,000	0.000
3	Installation of walk in tunnels(10mtsX4 mts=1 unit): 4 units in sub projects having	No	788	0	19,000	0.000
4	Installation of poly houses including MIS	No	50	0	8,000	0.000
5	Small poly houses in kitchen garden on cost sharing basis 85:15: 105 sqm poly house	No	306	0	46,000	0.000
6	Small poly houses in kitchen garden on cost sharing basis 85:15: 252 sqm poly	No	100	0	0	0.000

Components/Activities		Unit/ No.	Physical Targets & Achievements		Financial Targets & Achievements	
			Project Targets	Achievement Upto 4th February, 2025	Project Targets (Rs. In thousand)	Achievement Upto 4th February, 2025 (Rs. In thousand)
7	Small poly houses in kitchen garden on cost sharing basis 85:15: 504 sqm poly	No	50	0	0	0.000
2.2.8	Program for Next Generation			0	30,000	0.000
1)	For School Students	No	1	0	15,000	0.000
2)	Young Farmers	No	1	0	15,000	0.000
2.3	Research and Seed Production			0	75,000	71911.276
2.3.1	R & D support	Nos.	11		25,000	25000.000
1	Multi-location testing of CMS based hybrids of cauliflower in Himachal Pradesh	Nos.	1	Under progress	2,000	2000.000
2	Multi-location testing of GMS based bacterial wilt resistant hybrids of chilli in Himachal Pradesh	Nos.	1	Under progress	2,000	2000.000
3	Generation of double haploid through induced androgenesis in head cabbage (Brassica oleracea var. capitata)	Nos.	1	Completed	2,000	2000.000
4	Multilocal testing and validation of newly developed bacterial wilt resistant and high yielding bell pepper lines/hybrids in H.P	Nos.	1	Under progress	1,000	1000.000
5	Multilocal testing and validation of newly developed yellow vein mosaic virus resistant and high yielding okra lines/hybrids in H.P	Nos.	1	Under progress	1,000	1000.000
6	Development and promotion of management technology against insect-pests of brinjal	Nos.	1	Completed	2,000	2000.000
7	Management of root-knot nematode, Meloidogyne incognita in cucumber under protected cultivation	Nos.	1	Completed	2,000	2000.000
8	Assessment, validation and refinement of disease management technology for vegetable crops	Nos.	1	Completed	3,000	3000.000
9	Enhancing rice production in high-altitude areas of Himachal Pradesh by development and popularization of high yielding, cold tolerant japonica rice varieties through farmers' participatory approach.	Nos.	1	Under progress	4,000	4000.000
10	Genetic amelioration of Kala zeera (Bunium persicum Boiss) using tissue culture/micropropagation approach	Nos.	1	Under progress	3,000	3000.000
11	Popularization of potential A B C crops of North Western Himalayas as vegetable and seed under organic and natural farming conditions through participatory plant breeding. (A B C= Amaranthus, Buckwheat and	Nos.	1	Under progress	3,000	3000.000
2.3.2	Infrastructure development at SAU for vegetable seed production	Nos.	1	Under progress	50,000	46911.276

Components/Activities		Unit/ No.	Physical Targets & Achievements		Financial Targets & Achievements	
			Project Targets	Achievement Upto 4th February, 2025	Project Targets (Rs. In thousand)	Achievement Upto 4th February, 2025 (Rs. In thousand)
2.4	Innovative activities				47,000	12247.965
2.4.1	Establishment of centre of excellence for vegetable nursery production	Nos.	2	Under progress	14,000	12247.965
2.4.2	Trial for soil less cultivation/Fan Pad GH with vertical system	Nos.	1	-	10,000	0.000
2.4.3	Provision of tubular structure shade net houses	No	50	0	4,000	0.000
2.4.4	Provision of plastic mulching material	sqm	3060000	0	11,000	0.000
2.4.5	Provision of Anti- Hail nets in hail prone areas	sqm	76500	0	3,000	0.000
2.4.6	Assistence for soil testing kits	No	50	0	5,000	0.000
2.5	Livelihood support activities for on /off farm activities and service sector activities				2,65,000	4456.272
2.5.1	Formation and formalization of SHGs				5,000	62.138
1)	Workshop of group to develop objectives and norms	No	306	19	1,000	62.138
2)	Training to SHG members on role and responsibility	No	42	0	4,000	0.000
2.5.2	Mushroom cultivation on cost sharing basis 80:20	No	1400	-	50,000	142.000
2.5.3	Rearing of honey bees on cost sharing basis 80:20				9,000	0.000
1)	10 colony apiary unit	No	280	0	9,000	0.000
2.5.4	Dairy Farming on cost sharing basis 80:20 (Provision of 2 cows/ Buffalos per		140	0	34,000	0.000
2.5.5	Back yard poultry on cost sharin basis 80:20 (100 birds Per unit)		306	0	59,000	0.000
2.5.6	Service Sector		1	0	38,000	0.000
2.5.7	Promotion of Shiitake Mushroom Cultivation (Management Cost for SCTC)		1	Under progress	60,000	4252.134
2.5.8	Promotion of on farm of fish culture				10,000	0.000
1)	C/O Raceways of minimum of 50 cubic mtrs. 80:20 cost sharing basis.	No	10	0	2,000	0.000
2)	Input for Trout Rearing Unit on 80:20 cost sharing basis.	No	10	0	2,000	0.000
3)	C/O new grow out Fish ponds on 80:20 cost sharing basis.	No	10	0	6,000	0.000
2.6	Nutrition Improvement Program				6580	0.000
2.6.1	Sensitization of nutrition sensitive intervention	No	60	0	480	0.000
2.6.2	Dissemination of kitchen garden for nutrition improvement	No	120	0	4,000	0.000

Components/Activities		Unit/ No.	Physical Targets & Achievements		Financial Targets & Achievements	
			Project Targets	Achievement Upto 4th February, 2025	Project Targets (Rs. In thousand)	Achievement Upto 4th February, 2025 (Rs. In thousand)
2.6.3	Dissemination of recipes using nutritious ingredients	No	180	0	1,100	0.000
2.6.4	Nutrition Promotion under Next Generation Programme	No	60	0	1,000	0.000
Total (2)					10,84,680	120764.797
3. Value Chain and Market Development Component						
3	Value Chain and Market Development Component					
3.1	Bringing FPOs up as a business entity			0	1,95,000	0.000
3.1.1	Formation and formalization of FPO			0		0.000
3.1.2	Business management training			0		0.000
3.1.3	(1) Training on post harvest handling and value addition	LS	10	0	58,000	0.000
	(2) Procurement of service provider for business management	LS	3	0	30,000	0.000
3.1.4	Corpus funds	LS	1	1	1,07,000	107000.000
3.2	Establishment of FPO's Collection Center			0	78,000	0.000
3.2.1	Construction of collection center including warehouse	No	10	0	58,000	0.000
3.2.2	Procurement of machinery & equipment and O & M training	No	10	0	20,000	0.000
3.3	Matching FPOs with agribusiness operators	LS	1	0	30,000	0.000
3.3.1	Matching FPOs with agribusiness operators			0		0.000
3.3.2	Facilitation of pilot business trials			0		0.000
3.4	Modernizing facilities and equipment in Mandis	No	13 Market Yards	13 Nos. completed	3,10,100	310100.000
Total (3)					6,33,100	417100.000
4. Institutional Development Component						
4	Institutional Development Component					
4.1	Strengthening of DOA				14,06,000	345989.782
4.1.1	Recruitment of PMU Staff (Out-Source)	year			8,61,000	225760.607
4.1.2	Capacity Development of Project Staff on PDCA Cycle				16,000	4151.001
1	Orientation Workshop of PMU Staff	year	4	-	412	94.142
2	Training of District & Block Project Managers on PIM, PRA and CDP	year	3	1	465	165.555
3	Conceptual Training for PMU Staff on PDCA Cycle	year	2	1	321	100.380
4	Workshops to establish PDCA cycle	year	3	-	309	0.000

Components/Activities		Unit/ No.	Physical Targets & Achievements		Financial Targets & Achievements	
			Project Targets	Achievement Upto 4th February, 2025	Project Targets (Rs. In thousand)	Achievement Upto 4th February, 2025 (Rs. In thousand)
5	Exposure Visits of PMU Staff (Other States)	year	8	3	1,632	787.296
6	Peer Learning Workshop		60	20	600	206.543
7	Organising periodical review meetings, workshops etc.		50	37	1750	1299.970
8	HRD training on Team building , leadership, Motivation/inspiration and Stress		76	8	4560	772.110
9	Agriculture Extension Training		8	-	4120	434.459
10	Engineering Training		8	-	2120	290.546
4.1.3	Review of overall project implementation plan	LS	1	0	1,000	0.000
4.1.4	Preparation, monitoring & update of Supply Chain	LS	1	0	1,000	0.000
4.1.5	Preparation , monitoring & update of CDP for each sub-project	LS	1	0	1,000	0.000
4.1.6	Establishment of MIS & GIS and Monitoring System	LS	1	0	10,000	0.000
4.1.7	Procurement of ICT related equipment			0	1,47,000	20676.683
1	Procurement of general use IT equipment	LS	1	-	72.738	20073.580
2	Procurement of Engineering survey equipment	LS	1	0	20.047	560.949
3	Establishment of GIS/MIS Cell (New)	LS	1	0	2.434	0.000
4	Strengthening of GIS/MIS Cell (Existing)	LS	1	-	9.903	30.791
5	Procurement of time series Satellite Images	LS	1	0	2.200	0.000
6	Hiring of services for GIS survey, preparation of base spatial	LS	1	0	5.480	0.000
7	Hiring of Services for Devepment of software application	LS	1	-	23,800	11.363
8	ERP for office automation	LS	-	0	-	0.000
9	Capacity building of PMU staff on MIS/GIS , Aerial Monitoring and ICT environment	LS	1	0	6.200	0.000
10	Hiring of Resources Persons (additional)	LS	1	0	3.780	0.000
4.1.8	Construction of Training Centres		5	2	1,00,000	30731.408
4.1.9	Procurement of Equipment and Tools to PMU				2,69,000	64670.083
1	Rented accommodation for office space for DPMU		168	-	5.040	1667.870
2	Rented accommodation for office space for BPMU		840	-	16.800	5008.789
3	Furniture & office-equipments, (NewPMUs)		7	-	7.000	6053.748
4	Replacement/ updaton of Furniture		12	-	8.040	437.028

Components/Activities		Unit/ No.	Physical Targets & Achievements		Financial Targets & Achievements	
			Project Targets	Achievement Upto 4th February, 2025	Project Targets (Rs. In thousand)	Achievement Upto 4th February, 2025 (Rs. In thousand)
5	Transport facilities at PMU Procurement of 2 vehicles (SPMU 2) and hiring of 20 No. MUV (SPMU 2, DPMU 4, BPMU 14)		1	-	1,15,860	40190.202
6	Rental accomodation for extension officers (45 sites)		L.S	-	10,000	841.859
7	Publicity events, public awareness materials, inaugural ceremonies of sub projects		L.S	-	3,000	1222.168
8	Hiring of support services		192	-	11,520	3202.637
9	Hiring of Nutritional expert		10	0	600	0.000
10	Agricultural machinery and equipment for demonstration activities		1	0	61,040	0.000
11	Project Operational expenses		L.S	-	10,000	5786.799
12	Countermeasures for COVID-19		L.S	-	20,000	258.983
4.2	Strengthening of Extension Service Function				1,46,000	14301.960
4.2.1	Preparation of Information, Education and Communication (IEC) Material for Dissemination				29,000	4648.410
1	Posters		1	-	500	16.200
2	Wall writings & fixing of posters		306	90	612	181.860
3	Street plays on present situation and improvement		306	127	1,836	762.000
4	Publication of handouts and manuals		1	-	1,050	1038.720
5	Preparation of video programs		16	-	800	502.350
6	Display of shows in project villages		306	0	1,530	0.000
7	Farmers' fair in each Cluster		30	-	10,500	2147.280
8	Dissemination of technology through demonstration		1,184	0	11,840	0.000
4.2.2	Capacity Development of Agriculture Extension Staff				12,000	621.561
1	Farming practices on common and exotic vegetables with field exercises		24	2	3,000	172.550
2	Protected cultivation with field exercises		24	-	3,000	64.202
3	Integrated Pest Management		24	2	1,272	102.000
4	Integrated Nutrition Management		24	2	1,272	139.844
5	Soil analysis and soil health management		24	2	1,272	142.965
6	Market-led extension		24	0	1,272	0.000
7	Food diversification / Nutrition improvement/ Gender mainstreaming		24	0	1,272	0.000
4.2.3	Capacity Development of Engineering Staff				6,000	262.095
1	Application of the Guideline and Check list		24	-	1,272	60.645
2	Data preparation and record keeping of pre-condition of each sub-projects.		24	2	1,272	109.650

Components/Activities		Unit/ No.	Physical Targets & Achievements		Financial Targets & Achievements	
			Project Targets	Achievement Upto 4th February, 2025	Project Targets (Rs. In thousand)	Achievement Upto 4th February, 2025 (Rs. In thousand)
3	Design of Pumping machinery.		24	2	1,272	91.800
4	Collaboration with extension officers for O&M activities / Gender mainstreaming		24	0	1,272	0.000
5	Organization of design documents		24	0	1,272	0.000
4.2.4	Strengthening of Research-Extension-Farmer Linkages and Joint Visits		25	0	5,000	0.000
4.2.5	International/national/state level workshop/seminars		25	0	29,000	591.004
1	Organisation of Seminar /national workshops		4	0	10,000	0.000
2	Organisation of International workshops		2	0	15,000	0.000
3	State level workshop/seminars		16	2	4,000	591.004
4.2.6	Overseas Training , Exposure/Study visits of Project staff and other stakeholders		10	2	35,000	8178.890
4.2.7	Upgrading of infrastructure of State Agriculture Management and Extension Training Institute (SAMETI)		1	0	30,000	0.000
4.3	Baseline Survey and Impact Assessment			0	8000	1090.000
4.3.1	Conduct baseline survey		1	1	2000	1090.000
4.3.2	Conduct mid-line survey		1	0	2000	0.000
4.3.3	Conduct end-line survey		1	0	3500	0.000
4.4	Gender Mainstreaming	LS		LS	15,000	0.000
Total (4)					15,75,000	361381.742
Total (1+2+3+4)					65,99,980	1397200.838
5	Price Escalation				5,69,000	0.000
Category A Total (1+2+3+4+5)					71,68,980	1397200.838
Category B Consultancy Services					5,46,000	96816.896
Category C Physical Contingency					3,58,000	0.000
Grand Total of Eligible Portion (Category A+B+C)					80,72,980	1494017.734
Non Eligible Portion						
Administrative cost					404000	176697.246
GST					1134000	137221.432
Import Tax/ Other Tax					17000	0.000
Front End Fee					16000	0.000
Interest During Construction					462000	0.000
Grand Total of Non Eligible					2033000	313918.678
Grand Total (Eligible+Non-Eligible)					1,01,05,980	1807936.412

Annexure- "II"

Audit observations appearing in the Audit Report conducted by AG H.P. for the FY 2019-20, 2020-21, 2021-22, 2022-23 & 2023-24.

Audit Report 2019-2020

Sr. No.	Year	Para No.	Description	Status
1	2019-20	5*	Non deduction of royalty ₹ 7.95 lakh	Reply Submitted

Audit Report 2020-21

All the audit paras pointed out by AGHP during 2020-21 have been settled.

Audit Report 2021-22

Sr. No.	Year	Para No.	Description	Status
1	2021-2022	2	Maintaining multiple bank accounts and keeping funds in private bank: ₹ 47.23 lakh	Reply submitted
		3	Undue favour to vendor for hiring of vehicle ₹ 3.05 lakh.	Reply submitted
		4	Non-achievement of financial targets of resulting in backlog - ₹ 46.28 lakh	Reply submitted

Audit Report 2022-23

Sr. No.	Year	Reference No.	Description	Status
1	2022-2023	OBS-837040	Unauthorized delay in completion of any of the sub-project due to selection of non-feasible sub projects resulting in further delay in completion of other components of the project allotted to the district unit- ₹ 221.00 crore.	Reply submitted
		OBS-835957	Slow pace of completion of execution work of construction of training centre at Salogra- ₹ 200.00 lakh	
		OBS-837033	Non-inclusion of clause in the agreement for interest earned on advance payment released to the executing agencies resulted in loss of ₹ 31.50 lakhs.	
		OBS-837056	Selection of participants for international exposure visit cum training to Japan who could not render their services with the activities of project till the completion of project due to retirement/posted outside the state resulted in unfruitful expenditure	

			– ₹ 20.66 lakh	
		OBS-836033	Inadmissible expenditure incurred during departmental meetings and departmental ceremony – ₹ 5.90 lakh.	
		OBS-837053	Non finalization norms of incurring expenditure for organising periodical review meetings, workshop etc. under Institutional Development Components – ₹ 2.88 lakh	
		OBS-837050	Inadmissible expenditure incurred from eligible portion of project for conducting farmer fair cum inauguration of FTC, Bangana and foundation of three sub-projects – ₹ 2.00 lakh.	
		OBS-837065	Organizing awareness camp on ineligible activities – ₹ 0.65 lakh.	
		OBS-837062	Organization of an awareness camp of non-feasible sub-projects resulted in unfruitful expenditure – ₹ 0.37 lakh.	
		OBS-837041	Non-conducting awareness camp under the farmers' support component in accordance with the unit cost norms resultantly excess expenditure incurred – ₹ 0.24 lakh.	

**6 Nos. Audit Paras for the FY 2022-23 have been settled.*

Audit Report 2023-24

Sr. No.	Year	Reference No.	Description	Status
1	2023-24	OBS-1400608	Irregular Purchase of IT equipment without obtaining approval of competent Authority- Rs. 40.27 lakh.	Annotated reply submitted to AGHP
		OBS-1400637	Excess expenditure against approved Annual Plan of Operations (APO) without prior approval of competent authority- Rs. 42.31 lakh.	
		OBS-1400656	Less payment to Outsourced staff- Rs. 1.44 lakh.	
		OBS-1400668	Shortage of staff	
		OBS-1400682	Non-adhering to the terms and conditions of notice inviting tender.	



		OBS-1400685	Irregular subsidy given to the farmers for procurement of agriculture machinery- Rs. 5.35 lakh.
		OBS-1400788	Expenditure on the component of GST on the works contract charged from the eligible portion instead of the non-eligible portion of the project - Rs.178.55 lakh.
		OBS-1400800	Excess deduction of Labour Cess and TDS from the running bills contractor-Rs.3.41 lakh.
		OBS-1400336	Non-maintenance of uniformity among various DPMUs for imposition of surcharge on royalty.
		OBS-1400863	Non-imposition of penalty on royalty by DPMU Palampur-Rs. 0.80 lakh.
		OBS-1400887	Blockade of funds of Rs. 150.00 lakh resulted in loss of interest of Rs. 26.34 lakh.
		OBS-1400902	Undue favour to contractor by non-imposition of Liquidation Damages for delay in completion of work.
		OBS-1400987	Non-utilization of accrued interest amounting to Rs. 5.00 crore.
		OBS-1401012	Non achievement of financial targets resulting in backlog-Rs. 83.43 crore
		OBS-1401029	Non-conducting of physical verification of stores and stocks.
		OBS-1401912	Release of funds to defunct FPC without entering into any agreement resulted in loss of public money - Rs. 54.24 lakh and non-utilization of collection center cum flour mill resulted in unfruitful expenditure - Rs. 203.74 lakh.
		OBS-1404951	Non-disposal of unserviceable items Rs. 14.17 lakh.
		OBS-1404959	Blockage of govt. fund due to non-achievement of physical and financial targets amounting to Rs. 382.97 lakh.

HIMACHAL PRADESH AGRICULTURE DEVELOPMENT SOCIETY

ANNUAL REPORT 2021-22



H.P. Crop
Diversification
Promotion Project
JICA-ODA



ALWAYS COMMITTED TO THE PROSPERITY OF FARMERS



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



SOCIETY HQ : HAMIRPUR - 177001, H.P.

PBX (Tele-fax) +91-01972-223059

Emails: pdcdp-hp@nic.in, pmucdp-hp@nic.in

HIMACHAL PRADESH AGRICULTURE DEVELOPMENT SOCIETY

ACKNOWLEDGEMENT

On the successful completion of HPCDP Phase-I in five districts of Himachal Pradesh, ₹ 1010.60 crore Phase-II of the H.P. Crop Diversification Project (HPCDP) supported by Japan International Cooperation Agency (JICA) was put to implementation from June 2021, onwards. This project is also being implemented in society mode under the HP Agriculture Development Society, formed under the Society Registration Act, 2006 (Registration No. 43/2011 dated 07-02-2011). The HPADS is started by epic bodies i.e. the Governing Council/Body, headed by the Hon'ble Agriculture Minister to the GoHP, the Executive Committee, headed by the Worthy Secretary (Agri.) to the GoHP.

This Phase of the JICA ODA comprise of ₹ 807.30 crore as loan ₹ 203.30 crore as state share. JICA has committed to lend JPY 11302 Million under the said ODA at 1.15% annual rate of interest for the state along with ₹ 54.60 crore of towards consulting service at 0.15 % annual rate of interest. This loan effectuation is from July, 2021 to September 2031. While project period remains from June, 2021 to December, 2029. Loan repayment period is of 30 years and shall be made by the Govt. of India. The Phase-II of JICA aided Crop Diversification Project will be implemented in all 12 districts of the State to boost up the socio-economic status of farmers as have been achieved

in the phase-I of the project implemented in five pilot districts of Mandi, Kangra, Hamirpur, Bilaspur and Una since 2011.

In phase-II of the project, there shall be 306 sub projects for providing irrigation facilities in 7933 ha. area. The targeted increase of gross income per hectare is expected to be ₹ 2.50 lakh at the end of project from the existing ₹ 0.625 lakh per ha. (Baseline survey).

For smooth and effective implementation of Phase-II project, 14 No. Block Project Management Units, 4 Nos. District Project Management Units established and well equipped with necessary staff & other logistics. The State Project Management Unit (SPMU) as State headquarter, has been established at Agriculture Complex, Hamirpur (H.P).

As, I present this 10th Annual Report of the Society for 2021-22, I take this opportunity to once again extend my gratitude and thanks to the authorities from JICA India, Govt. of India, Govt. of Himachal Pradesh & all other stake holders of HPCDP for accomplishment of Phase-I of the project as well as approval of the Phase-II.

Dr. Sunil Chauhan

Project Director



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



HIMACHAL PRADESH AGRICULTURE DEVELOPMENT SOCIETY

TABLE OF CONTENTS

1. INTRODUCTION	4
2. ABOUT THE SOCIETY	5
Main objectives	5
Powers & Functions of the Governing Council	5
Powers & Functions of the Executive Committee	6
3. ABOUT JICA	7
4. About the Project (Phase-I)	8
Achievement in respect of Qualitative & Quantitative Indicators of HPCDP Phase-I	9
5. ABOUT THE PROJECT (Phase-II)	10
Management Units of the Project	12
State Project Management Unit (SPMU):-	12
District Project Management Unit (DPMU):-	12
Block Project Management Unit (BPMU):-	12
Brief Background of HPCDP	15
Project Description:	15
Features of Phase-II Project:	15
Project Components:	16
Qualitative and Quantitative Indicators of the project:	17
The Audit Report(s)	17
Physical & financial status	18



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



HIMACHAL PRADESH AGRICULTURE DEVELOPMENT SOCIETY

1. INTRODUCTION

AGRICULTURE IN HIMACHAL PRADESH

Himachal Pradesh is a hilly state located at the foot of the Western Himalayas, with an area of 5.57 million hectares and a population of over 7 million.

Nearly 70 percent of working population in the state is engaged in agriculture, but agriculture accounts for only 10.4 percent of the gross state domestic product. The low agriculture productivity partly attributes to the fact that the area available for growing crops is limited to 10 percent of the total land

of the state, due to the hilly terrain, thus more than 87 percent of the farmers are marginal and small landholders with average holding size of < 1.00 Ha. Also, only 20 percent of the cultivable area has irrigation facilities, while the rest has to depend on the rains.

Thus, majority of the farmers in the state remain engaged in traditional cultivation of the food grains, not being able to diversify to more profitable commodities, such as vegetables and high value crops.

In order to boost the agriculture development and enhance the farm income in the rural areas, it is, therefore, important to increase the productivity of the existing cultivated area, through shifting from self-subsistence crop cultivation to diversified agriculture, by adopting cash crops such as vegetables etc. suitable for the areas. As such overcoming the major constraints of limited irrigation facilities, farm access roads and insufficient marketing facilities, is highly essential.

H. P. LAND USE AT A GLANCE

	*Area (Ha)
Total Geographical Area	55,67,300
Forests	11,05,997
Barren & Un-culturable lands	7,83,404
Land put to non-agricultural use	3,48,649
Permanent pastures	15,03,833
Cultivable waste lands	1,28,224
Other fallow lands	22,109
Current fallows	59,991
Net area sown	5,38,412
Area sown more than once	4,02,185
Average annual rainfall	1075 mm
Gross irrigated area	1,91,000
Net irrigated area	1,09,940
Total cropped area	9,40,597



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



HIMACHAL PRADESH AGRICULTURE DEVELOPMENT SOCIETY

2. ABOUT THE SOCIETY

Himachal Pradesh Agriculture Development Society (HPADS) was established as an autonomous organization outside the Department of Agriculture, H.P., on Feb. 7, 2011 under HP Society Registration Act, 2006 for smooth & effective implementation of the JICA assisted project. The society consists of the following bodies:-

- **Governing Council (The General House)**
- **Executive Committee**
- **Project Management Units**

The Governing Council in its first meeting held on January 6, 2011, approved the memorandum of association, Rules & Regulations of HPAD Society and subsequently, its registration under the Act, the instrument of society came into force.

MAIN OBJECTIVES

- The society is an independent and autonomous body with the main aim to enhance farmers' income through sustainable and diversified farming system in Himachal Pradesh.
- To implement the project "Himachal Pradesh Crop Diversification Promotion Project" in Himachal Pradesh with due diligence and efficiency and in conformity with appropriate powers and with due regard to social and environment guidelines, acceptable to stakeholders and the Govt. of Himachal Pradesh in accordance with the MOU signed between the funding agency, GoI and GoHP.

After the successful implementation and completion of Phase-I of HPCDP Project, the Govt. of H.P. renotified the Governing body and Executive Committee of Himachal Pradesh Agriculture Development Society (HPADS) for implementation of Phase-II of H.P. Crop Diversification Promotion Project, JICA-ODA on 5th March, 2021

Powers & Functions of the Governing Council

The Governing Council have the following powers and functions:

1. Observe the provisions of the memorandum of Association rules and such instruction of Govt. of H.P. in department dealing with the affairs of the Himachal Pradesh Agriculture Development Society, as may be issued, from time to time.
2. Exercise general control and issue such directions for the efficient management and administration of the affairs of the HPADS, as may be necessary.
3. Nominate members of the Executive Committee in accordance with rules.
4. Approve the annual budget of the HPADS, drawn up by the Executive Council and approve the budget for submission to the Govt. of H.P., for sanction of grants.
5. Consider the annual report approved by the Executive Committee.
6. Consider the balance sheet and audited accounts.
7. Add and amend, with prior approval of the Govt. of H.P., rules of the HPADS.
8. Form bye-laws, not inconsistent with these rules and the memorandum of association for the management, administration & regulation of the business of the HPADS for the furtherance of its objectives.
9. To constitute committees, with or without powers to control, namely:
 - i. Executive Committee.
 - ii. Any other committee deemed necessary.
10. To perform such other functions as are entrusted to it, under these rules.
11. The Governing Body may by resolution delegate the powers to its chairman or of any Standing Committee or the Project Director, State PMU or to any other officer of the HPADS, such of its powers for the conduct of business, as it may deem fit.



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



2. ABOUT THE SOCIETY

Powers & Functions of the Executive Committee

The Executive Committee shall have the following powers and functions:

1. It shall be the responsibility of the Executive Committee to endeavour to achieve the objective of the Society and to discharge all its functions. The Executive Committee shall exercise all administrative and financial powers including powers to create posts of all descriptions and make appointments, thereon, in accordance with regulations.
2. The Executive Committee shall have under its control the management of all the affairs and funds of the Society.
3. The Executive Committee shall have the powers and responsibilities in respect of the following:
 - i. To frame, regulation with the approval of the State Government.
 - ii. To frame amend or repeal any bye-laws for the conduct of activities of the Society, in furthering its objectives with the approval of the Governing Council.
4. The Executive Committee shall have the powers to enter into agreement(s) with other public or private organizations or individuals for furtherance of the objectives of the society.
5. The Executive Committee shall have the powers for securing and accepting endowments, grants-in-aid, donation, or gifts to the Society on mutually agreed terms and conditions, of which shall not be inconsistent or in conflict with the objectives of the Society or with provisions of these rules.
6. The Executive Committee shall have the powers to take over and/or acquire in the name of the Society by purchase, gift or otherwise from Government and other public bodies or private individuals, any movable and immovable properties in the State or elsewhere or other funds together, with any attendant obligation and engagement, not inconsistent with the objectives of the Society and the provisions of these rules.
7. The Executive Committee shall take all steps to establish Project Management Unit or any other institution at State Level, District Level and Block Level required for the successful implementation of the project.
8. The Executive Committee shall have the powers to sell or give on lease any movable or immovable property of the Society provided, however, that no asset of the Society created out of Govt. grants shall without the approval of the Government be disposed off, encumbered or utilized for purpose other than those for which the grant was sanctioned.
9. The Executive Committee shall also:
 - i. Consider and approve the Annual Plan of Operation of Project "Himachal Pradesh Crop Diversification Promotion Project".
 - ii. Consider and approve the Annual budget of the project.
 - iii. Sort out problems in the implementation of the project.
 - iv. To ensure coordination with the line Departments / Agencies for the project activities.
 - v. To review the implementation of the activities under the project.
 - vi. Perform any other works assigned by the Government.
10. The Executive Committee may delegate to the Chairman, Project Director or any of its members and/or to a Committee/Group or any other officer of the Society/project such administrative and financial powers and impose such duties as it deems proper and also duties that are to be exercised or discharged in furtherance of the objectives of the society.



HIMACHAL PRADESH AGRICULTURE DEVELOPMENT SOCIETY

3. ABOUT JICA

The Japan International Cooperation Agency (JICA) is a governmental agency that delivers the bulk of Official Development Assistant (ODA) for the Government of Japan. It is chartered with assisting economic & social growth in developing countries and the promotion of international cooperation. JICA has its headquarters in Tokyo, Japan.



Japan International
Cooperation Agency
(JICA)



Established on October 1, 2003, under an Act (Act No. 136, 2002) of the Incorporated Administration Agency – JICA aims to contribute to the promotion of international cooperation as well as the sound development of Japanese and global economy by supporting the socioeconomic development, recovery or economic stability of developing regions. JICA's version is "Inclusive & Dynamic Development".

JICA has four missions, that include

- Addressing the global agenda,
- Reducing poverty through equitable growth,

- Improving governance, &
- Achieving human security.

JICA has following four strategies

- Integrated assistance
- Seamless assistance
- Promoting development partnerships
- Enhancing research & knowledge sharing

Presently JICA-INDIA is being headed by Mr. SAITO Mitsunori, as the Chief Representative, effective on August 24, 2021; who took over from Mr. KATSUO Matsumoto.

[\(https://www.jica.go.jp/india/english/\)](https://www.jica.go.jp/india/english/)

History of HPCDP-JICA Project (Phase-I) at a glance

- | | |
|--|-----------------|
| • DoA formulated Crop Diversification Project | March 2009 |
| • MoD signed for ODA Loan Project | October 1, 2010 |
| • Loan Agreement Signed with JICA | Feb 17, 2011 |
| • Project Management Unit (PMU) set up | May, 2011 |
| • Loan effectuation date | June 16, 2011 |
| • Loan disbursement closure date | June 15, 2021 |
| • Registration of H.P. Agriculture Development Society | Feb 7, 2011 |
| • Date of completion of Phase-I | May 31, 2021 |



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



HIMACHAL PRADESH AGRICULTURE DEVELOPMENT SOCIETY

4. ABOUT THE PROJECT (PHASE-I)

In the first phase, crop diversification project was implemented in 5 districts of the state i.e., Kangra, Mandi, Bilaspur, Hamirpur, Una from the year 2011 to 2021, on which ₹ 321 crore were spent. The first phase of the project has shown very positive outcomes, as a result of which not only the production of vegetables and cash crops has increased in the project area, but the income of the farmers has also increased by 3 to 5 times. In view of the success of the first phase of the project, the second phase was approved by the Government of India and JICA in January 2021, for ₹ 1010.60 crore.



Chief Representative, JICA India visit to Project HQ (Planting a tree)-2016



Afghanistan Delegates Visit (Solar P.V. panel for water pumping system at Chhiber Ballu, Bilaspur)



Onion nursery production at FIS Makruhal kahal



Cluster Fair under BPMU, Nurpur



Farm Access Road, Mandi



Exotic vegetable introduction for higher returns in BPMU, Nurpur



Programme for Next Generation in school



Programme for Next Generation in school



Garlic Demonstrations at LIS Rahjol



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



HIMACHAL PRADESH AGRICULTURE DEVELOPMENT SOCIETY

4. ABOUT THE PROJECT (PHASE-I)



Cauliflower demonstration at LIS Rahjoi



Visit of TCP Experts to monitor the use of Poly tunnels



Group Photo of International Workshop - Feb. 2020



Power tiller and Farm Mechanization during Phase-I



Pea crop cultivation in project area in Mandi

Achievement in respect of Qualitative & Quantitative Indicators of HPCDP Phase-I

Sr.	Indicators	Baseline (2009)	Target (2021)	Achievements	%age
Operational Indicators					
1	Irrigation Beneficiary Area (ha.)	-	3712	4671.10	128
2	Length of Access Farm Road (Km)	-	35.373	36.95	105
3	Vegetable Cultivated Area (ha.)	150	3230	3265	101
Effect Indicators					
1	Gross Annual Average Farm Income/ha.	55000	145000	240120	165
2	Avg. Yield of Vegetable (tons)/ha.	10.4	17.0	18	105
3	Avg. Yield of Food grain (tons)/ha.	1.8	2.5	2.8	112
4	Employment Generated (Nos.)				
	On Farm			9700	
	Off Farm			4400	



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



4. ABOUT THE PROJECT (PHASE-I)

New innovations & lessons learnt

- Community participation during planning, execution & O&M of irrigation system.
- Krishak Vikas Association (KVA) are doing Warabandi & collecting water charges. Community has the ownership of irrigation systems
- Introduced solar water pumping system in 70 sub-projects thereby reducing O&M cost to the farmers
- In lift & tube well irrigation systems, irrigation efficiency has been increased by 40-60% through micro irrigation system
- Vermi composting and poly house cultivation has been introduced in the project to promote organic and precision farming
- Introduced Multipurpose processing machine for value addition by SHG's
- Shiiake Cultivation and Training Center (SCTC) set up, first of its kind in India with the support of Yats corporation, Japan
- New machinery suitable for hilly areas like power tiller, power weeder, motorized reaper, brush cutter, earth auger have been introduced.
- All infrastructure works completed within the original cost estimates. No escalation.
- Grafted plants of tomato, capsicum and cucumber introduced in disease prone areas.
- Programme for next generation conducted in 41 Sr. Sec. Schools for more than 2000 students to generate interest in farming.

5. ABOUT THE PROJECT (PHASE-II)

Keeping in view the achievements of Phase-I, it was envisaged to prepare and propose Phase-II of HPCDP. Subsequently, the DPR was prepared in Oct., 2018 and submitted to GoI for approval. JICA conducted preparatory survey between July-Dec, 2020 through online mode with the help of DoA & HPCDP Phase-I Team. The appraisal of the project was done by JICA mission in Dec., 2021. The Minutes of Discussion (MoD) were signed in February, 2021 between GoHP, GoI and JICA. The loan agreement was signed in March, 2021. To implement Phase-II of Project in the entire state, 1 State Project Management Unit (SPMU), 4 District Management Units (DPMU) and 14 Block Project Management Units (BPMU) have been established under the HPADS.

It was decided that the main implementing and

coordinating agency for project remains "Himachal Pradesh Agriculture Development Society", constituted under Phase-I. In the nine years of project implementation, HPCDP Phase-II will incur funds amounting to ₹ 1010.60 crore in twelve districts of Himachal Pradesh through State Project Management Unit with its headquarter at Hamirpur, for the purpose of sustainable crop diversification by development of minor irrigation facilities and farm access roads as well as improvement of extension service function including vegetable cultivation and value chain & marketing. The expenditure against the project components will be incurred at the state, district and block levels in all the 12 districts viz; Hamirpur, Bilaspur, Kangra, Mandi, Una, Solan, Kullu, Shimla, Kinnaur, Chamba, Sirmour and Lahaul & Spiti.

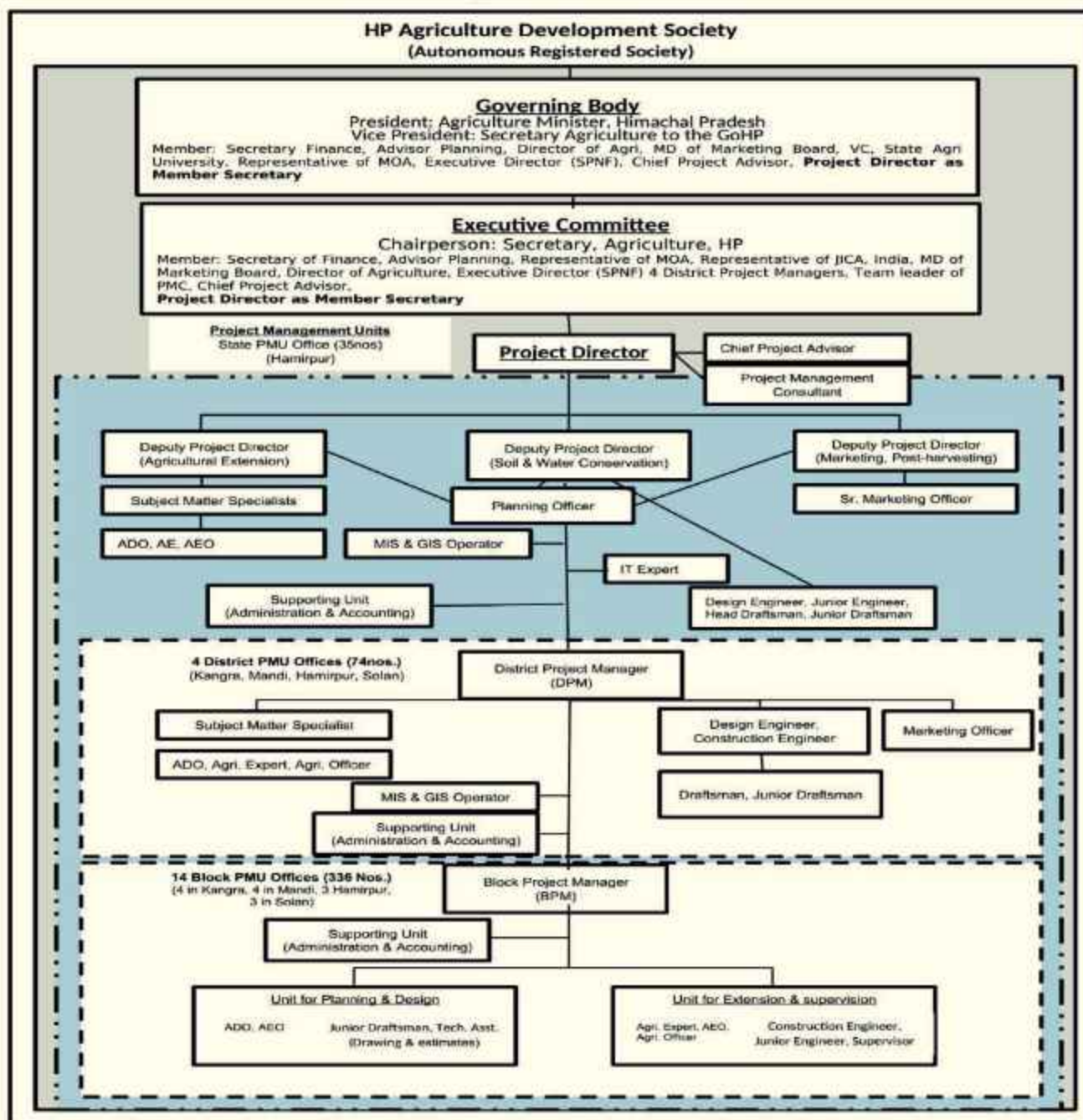


HIMACHAL PRADESH AGRICULTURE DEVELOPMENT SOCIETY

5. ABOUT THE PROJECT (PHASE-II)

Organogram of the HPADS for HPCDP (Phase-II), JICA-ODA

Organization Chart



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



5. ABOUT THE PROJECT (PHASE-II)

Management Units of the Project

H.P. Crop Diversification Promotion Project, Phase-II is covering all the 12 districts of Himachal Pradesh. The project focuses on 306 sub-projects, where irrigation infrastructure being created and various farmers support activities being undertaken.

The project consists of the following units.

State Project Management Unit (SPMU): -

Number of Units: One

Location: Agriculture Complex, District Hamirpur

Tele-Fax: 01972-223059

E-mail address: pdcdp-hp@nic.in & pmucdp-hp@nic.in

Website: hpcdp.nic.in

Functions of the State PMU: -

The State PMU is entrusted with the overall managerial charge of implementation of the project. State PMU lead the overall project planning, project coordination; including that with JICA; overall procurement management, financial management including collating the expenditure statements from District level PMUs and Block level PMUs and consolidate these for submitting the reimbursement claims to JICA, monitoring and evaluation, and preparation of reports such as Quarterly Progress Reports and Project Completion Report etc.

District Project Management Unit (DPMU): -

Four district PMUs established in the District of Kangra (Palampur), Mandi, Hamirpur & Solan

- i. District Project Management Unit, Hamirpur (covers Districts Hamirpur, Bilaspur & Una)

Location: District Project Management Unit, HPCDP JICA-ODA, Phase-II, Hamirpur Agriculture Complex, District Hamirpur - 177001 H.P.

E-mail address: dpmcdp-ham-hp@nic.in

- ii. District Project Management Unit, Palampur at Kangra (covers Districts Kangra & Chamba)

Location: District Project Management Unit, HPCDP JICA-ODA, Phase-II, Palampur

Top Floor, Bio Control Laboratory, Palampur, District Kangra - 176062 H.P.

E-mail address: dpmcdp-kan-hp@nic.in

- iii. District Project Management Unit, Mandi (covers

Districts Mandi, Kullu, Lahul & Spiti)

Location: District Project Management Unit, HPCDP JICA-ODA, Phase-II, Mandi Agriculture Complex, Jawahar Nagar, Mandi - 175001 H.P.

E-mail address: dpmcdp-man-hp@nic.in

- iv. District Project Management Unit, Solan (covers Districts Solan, Shimla, Sirmour & Kinnour)

Location: District Project Management Unit, HPCDP JICA-ODA, Phase-II Solan Village Kailer P.O. Saproon Tehsil & District Solan H.P. 173211

E-mail address: dpmcdp-sol-hp@nic.in

Functions of DPMU: -

The main functions of District PMUs are to conduct district level monitoring and supervision by PDCA (Plan-Do-Check-Action) cycle management as well as utilizing the MIS and GIS systems and undertake quality control measure of work to be done by Block PMUs. They are also to review detailed project design and other reports to be forwarded to State PMU for final approval.

Block Project Management Unit (BPMU): -

Number of Units: Fourteen

Locations:

- Four under DPMU Kangra viz., Palampur, Kangra, Dharamshala & Chamba
- Four under DPMU Mandi viz., Mandi, Kullu, Gohar & Sarkaghat
- Three under DPMU Hamirpur viz., Hamirpur, Bilaspur & Una
- Three under DPMU Solan viz., Solan, Nahan & Rampur

Functions of BPMU: -

Block PMU have following major functions:

- Community organization and their capacity building.
- Sub project level planning for project outputs in the shape of DPRs, Sub-project Development Plans, including Crop Diversification Plan & Livelihood Development Plans.
- Supervision, quality and progress control of Infrastructure development at sub-project sites.
- Leading the communities/beneficiary farmers towards project outputs by relevant support through various project interventions.



HIMACHAL PRADESH AGRICULTURE DEVELOPMENT SOCIETY

5. ABOUT THE PROJECT (PHASE-II)

Launching event Phase-II of HDCDP



Mr. SAITO Mitsunori, JICA India Chief
in Launching Event HPCDP Phase-II



2nd EC Meeting of HPCDP Phase-II



Field visit during Launching Event of
HPCDP Phase-II



Guests & Participants of
Launching Event



Field visit during Launching Event of HPCDP Phase-II



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



5. ABOUT THE PROJECT (PHASE-II)

Extension adimbi start project area



Map of location of sources of Phase-II target sites



Awareness camp at TWIS Rey



Objectives & Norms at FIS Dondu



Feasibility check of FIS Madul Kuhal



Discussion about DPR Planning of FIS Nanniya Kuhal with farmers



Training on roles and responsibilities of KVA members



Nursery sowing of Capsicum at sub-project Minjh Gram



Discussion on Objectives & Norms at FIS Barota Kuhal



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



5. ABOUT THE PROJECT (PHASE-II)

Brief Background of HPCDP Phase II

DoA prepared and submitted detailed project report (DPR) through H.P. Agri. Development Society to GoI:	October, 2018
MoD signed	February, 2021
Discussion with Contact Mission, Fact Finding Mission, Appraisal Mission and Loan Agreement Signed (ID-P290)	26 th March, 2021
Loan Effectuation	21 st July, 2021
Loan disbursement closing date	12 years after loan effectuation
Launching of Phase-II Project	16 th November, 2021

Project Description:

Project Name	Himachal Pradesh Crop Diversification Promotion Project (Phase -II)
Project Area	All 12 Districts of Himachal Pradesh
Project Duration	9 Years, (2021-2029)
Objective	Promoting sustainable crop diversification, increasing agricultural productivity and improving farm incomes.
Project Scope	To establish crop diversification model in 7 new districts, and expand the model to 5 Phase-I districts.

Features of Phase-II Project:

1. To promote crop diversification through development of necessary infrastructure in the Agriculture sector. Construction of infrastructure facilities like minor irrigation, farm road, solar pumping, solar/electric fencing etc.
2. Training, capacity building of farmers/extension workers.
3. Implementation of the project through public participation system by Krishak Vikas Associations (KVAs), Self Help Groups, Farmer Groups, Focused Groups.
4. Enhancing opportunities for improving livelihoods through dairy, beekeeping, backyard poultry, service sector, mushroom, shiitake mushroom cultivation and farm fish culture.
5. Promotion of innovative activities like nutritional reforms etc.
6. Ensuring a strong demand driven marketing system and setting up of 10 FPOs.
7. Capacity building of the community to take over the operation & maintenance of created Infrastructure.
8. Institutional development by strengthening agriculture department, strengthening extension service work and baseline survey, impact assessment etc.



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



HIMACHAL PRADESH AGRICULTURE DEVELOPMENT SOCIETY

5. ABOUT THE PROJECT (PHASE-II)

Project Cost:

Total project cost	₹ 1010.60 crore	14191 Mil. JPY
JICA Part (Loan)	₹ 807.30 crore (1.15 % interest rate)	11302 Mil. JPY
State's share	₹ 203.30 crore	2889 Mil. JPY

Project Components:

Name of component	Activities	Layout (₹ in Crore)
Infrastructure Development	Development of Minor Irrigation (FIS 191, LIS 94, TWIS 11, Convergence with existing I & PH schemes 10, Total 306), Micro Irrigation Systems, Catchment Area Treatment, Solar Pumping Systems, Farm Access Roads, Solar, Electric, Barbed and Chain Link Fencing, Infrastructure Development Support, Surveying, Testing and Designing.	330.72
Farmer Support Component	KVA capacity building, training on vegetables, food crops and value addition, agricultural machinery, development of 3 model seed farms, 11 research projects, small poly/net houses, tunnels, soilless farming, soil testing kits, plastic mulches and anti-hail nets, Support for livelihood through Poultry, Dairy, Fisheries, Mushroom, Shiitake Mushroom, Bee keeping, Service Sector Entrepreneurs, nutrition improvement (kitchen garden etc.) shall be undertaken.	108.50
Value Chain and Market Development	Formation of 10 FPOs, modernization of facilities in APMC	63.30
Institutional Development	Baseline Survey, Medium Term and Terminal Evaluation, Gender Mainstreaming	157.50
Price Escalation		56.90
Physical Contingency		35.80
Consulting Services @ 0.15 % & 1 INR = 1.40 JPY		54.60
Total JICA ODA Loan @ 1.15 % and 1 INR = 1.40 JPY		807.30
State's share (Non-Eligible) 20%		203.30



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



HIMACHAL PRADESH AGRICULTURE DEVELOPMENT SOCIETY

5. ABOUT THE PROJECT (PHASE-II)

Qualitative and Quantitative Indicators of the project:

Item	Unit	Current Status	Post Project Status
Irrigation Beneficiary Area	Ha.	1745.26	7933
Micro Irrigation	Ha.	-	560
Miscellaneous area under vegetables in (both seasons)	Ha.	576.72	6944
Vegetable cultivating farmer	No.	3100	9000
increase in yield	M/T/Ha.		
Vegetables	M/T/Ha.	10.17	24.00
Cereal		2.00	2.83
Gross Annual Agricultural Income	₹/Ha.	62,605	2,50,000
Formation of FPOs	No.	-	10
Solar pumping unit	No.	-	83
Number of SHG established	No.	-	100

The Audit Report(s)

The summary of audit observations appearing in the Audit Reports of 2020-21 & 2021-22

Audit Report 2020-2021

Sr. No.	Year	Para No.	Description	Status
1	2020-2021	1	Non-Utilization of interest amount/society income ₹9.54 Crore	Amount being utilized as HPADS guidelines, Reply sent to AGHP
		2	Non adjustment of advance ₹2.90 Lakh	Para settled
		3	Irregular payment of Honorarium	Para settled
		4	Non-Deduction of TDS from service provider ₹0.08 Lakh	Para settled
		5	Non finalization of Annual Account for Year 2021-2022	A/A balance sheet delayed due to Covid-19 restriction, Balance sheet prepared & reply sent to AGHP
		6	Non preparation of General ledger in prescribed format	Para settled
		7	Maintaining Multiple bank accounts & keeping money in private banks	Para deleted



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



HIMACHAL PRADESH AGRICULTURE DEVELOPMENT SOCIETY

5. ABOUT THE PROJECT (PHASE-II)

Audit Report 2021-2022

Sr. No.	Year	Para No.	Description	Status
1	2021-2022	1	Non achievement of Financial targets resulting in backlog ₹ 46.28 lakh	Reply submitted
		2	Non utilization of accrued interest amounting to ₹ 13.64 crore	Reply submitted
		3	Maintaining of multiple bank accounts and keeping funds in private banks ₹ 47.23 lakh	Reply submitted
		4	Undue favour to vendor for hiring of vehicle ₹ 3.05 lakh	Reply submitted
		5	Irregular reimbursement of cost of inadmissible medicines/lab test ₹ 0.05 lakh	Reply submitted
		6	Non preparation of balance sheet	Reply submitted
		7	Non conducting of Physical verification of the Stock and Stores-Phase-II	Reply submitted
		8	Non conducting of Physical verification of the Stock and Stores of DPMU & BPMU, Mandi – Phase-II	Reply submitted

Physical & financial status

Physical & financial progress report of HPCDP, Phase-II Project (ID-P290) up to March, 2022 (w.e.f. the effectuation of the Project)

Annual Physical Financial Progress of Project for the Year (₹ In Lakh)				
Sr. No.	Item	Unit	Achievement	
			Physical	Financial Achievements
1. Infrastructure Development for sub-projects				
1.3.2	Survey, Investigation, Design & Estimation (Preparation of DPR)	Nos.	60	106.98
	Total of A			106.98
2. Farmers' Support Component				
2.1	Formation and Strengthening KVA			
2.1.1	Awareness Camp involving Community	Nos.	62	4.98
2.3	Research and Seed Production			
2.3.1	R & D support (11 Sub projects)	Nos.	Under execution	90.15
2.3.2	Infrastructure development at SAU for vegetable seed production	No.	Under execution	248.30



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



HIMACHAL PRADESH AGRICULTURE DEVELOPMENT SOCIETY

5. ABOUT THE PROJECT (PHASE-II)

Physical & Financial Status

2.5.7	Promotion of Shiitake Mushroom Cultivation (Management Cost for SCTC)		L.S	5.42
	Total of B			348.85
3. Value Chain and Market Development Component				
3.4.1	Facility construction with equipment			
3.4.2	O & M of facilities & equipment	Nos.	Under execution	540.00
	Total of C			540.00
4. Institutional Development Component				
4.1	Strengthening of DOA			
4.1.1	Recruitment of PMU Staff (Out-Source)			275.08
4.1.2	Capacity Development of Project Staff on PDCA Cycle			
	(7) Organising periodical review meetings, workshops etc.	Nos.	20	2.05
4.1.6	Establishment of MIS & GIS and Monitoring System			
4.1.7	Procurement of ICT related equipment			98.98
4.1.8	Construction of Training Centres	Nos.	Under execution	1.90
4.1.9	Procurement of Equipment and Tools to PMU		L.S	144.75
4.2	Strengthening of Extension Service Function			
4.2.1	Preparation of Information, Education and Communication (IEC) Material for Dissemination			17.38
	(2) Publication of handouts and manuals		L.S	1.63
	(5) Preparation of video programmes		L.S	2.37
	(7) Farmers' fair in each cluster		L.S	13.38
4.3	Baseline Survey and Impact Assessment			
4.3.1	Conduct baseline survey		1	10.90
	Total of D			551.04
	Total (A+B+C+D)			1546.87
Non Eligible				
	Administrative Cost and GST			352.68
	Grand Total of Eligible and non eligible			1899.56



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



5. ABOUT THE PROJECT (PHASE-II)

Physical & Financial Status

- Govt. of H.P. launched Phase-II of HPCDP JICA-ODA on 16th November 2021 at Dharmashala, District Kangra. Besides GoHP, delegates from the GoI as well as the JICA India including the Chief Representative, Mr. SAITO Mitsunori also participated in the launching ceremony.



- Revised notification regarding Governing Council, Executive Committee:** The Governing Council and Executive Committee were reconstituted for the effective implementation of HPCDP (Phase-II) JICA-ODA. The Governing Body of HPCDP (Phase-II) JICA-ODA was constituted by the Government of HP vide Notification No. AGR.B-F-(1)-19/2020 dated 05.03.2021. The EC of HP Agriculture Development Society was constituted by Government of HP vide notification No. AGR.B-F-(1)-19/2020 dated 05.03.2021.



HIMACHAL PRADESH AGRICULTURE DEVELOPMENT SOCIETY

5. ABOUT THE PROJECT (PHASE-II)

2EC volification for phase-II Project HPADS Governing Council notification:

-2-

Government of Himachal Pradesh
Department of Agriculture
No. Ag-B-FCI-10/2020 Dated: Shimla-2, 9a 05th March, 2021.
NOTIFICATION
The Governor, Himachal Pradesh is pleased to constitute the Governing Body of Himachal Pradesh, HP Crop Diversification Promotion Project (Phase-II), JICA ODA in Himachal Pradesh as under:

1.	Agriculture Minister, Himachal Pradesh	President
2.	ACSO's Secretary/Secretary (Agr.) to the Govt. of H.P.	Vice President
3.	ACSO's Secretary/Secretary (Finance) to the Govt. of H.P.	Member
4.	Adviser (Planning), H.P.	Member
5.	Chief Project Adviser, State Project Management Unit	Member
6.	Director of Agriculture, H.P.	Member
7.	Representative of Ministry of Agriculture & Farmers Welfare, D.A.C., Govt. of India	Member
8.	Vice Chancellor, CUBHPPV, Palampur, H.P.	Member
9.	Managing Director, H.P. State Agricultural Marketing Board	Member
10.	Executive Director (KSPNP)	Member
11.	Project Director, State Project Management Unit	Member Secretary

Two non-official members to be nominated by Government of Himachal Pradesh from progressive farmers.

Functions and Powers of Governing Council:-

The Governing Council shall have the following functions and powers namely to:

1. Observe the provisions of the Memorandum of Association rules and such instructions of Govt. of H.P. in department dealing with the affairs of the Himachal Pradesh Agriculture Development Society as may be the issue from time to time.
2. Exercise general control and issue such directions for the efficient management and administration of the affairs of the Himachal Pradesh Agriculture Development Society as may be necessary.
3. Nominate members of the executive council in accordance with rules.
4. Approve the annual budget of the Himachal Pradesh Agriculture Development Society drawn up by the executive council and approve the budget for submission to the Govt. of H.P. for sanction of grants.
5. Consider the annual report approved by the executive council.
6. Consider the balance sheet and audited accounts.

Continued: 3/-

By Order
Sd/-

Additional Chief Secretary (Agr.) to the
Government of Himachal Pradesh

Government of Himachal Pradesh
Department of Agriculture
No. Ag-B-FCI-10/2020 Dated: Shimla-2, 9a 05-05-2021.
NOTIFICATION

The Governor, Himachal Pradesh is pleased to constitute the Executive Committee of Himachal Pradesh Agriculture Development Society for Implementation of Himachal Pradesh Crop Diversification Promotion Project (Phase-II), JICA ODA in Himachal Pradesh as under:

1.	ACSO's Secretary/Secretary (Agr.) to the Govt. of H.P.	Chairman
2.	ACSO's Secretary/Secretary (Finance) to the Govt. of H.P.	Member
3.	Adviser (Planning), H.P.	Member
4.	Representative of Ministry of Agriculture & Farmers Welfare, D.A.C., Govt. of India	Member
5.	Representative of JICA India Office	Member
6.	Chief Project Adviser, State Project Management Unit	Member
7.	Executive Director (KSPNP)	Member
8.	Managing Director, H.P. State Agricultural Marketing Board	Member
9.	Chief Adviser TUP	Member
10.	Chief Adviser TSP	Member
11.	Chief Adviser TSP	Member
12.	Chief Adviser TSP	Member
13.	Chief Adviser TSP	Member
14.	Chief Adviser TSP	Member
15.	Chief Adviser TSP	Member
16.	Chief Adviser TSP	Member
17.	Chief Adviser TSP	Member
18.	Chief Adviser TSP	Member
19.	Chief Adviser TSP	Member
20.	Chief Adviser TSP	Member
21.	Chief Adviser TSP	Member
22.	Chief Adviser TSP	Member
23.	Chief Adviser TSP	Member
24.	Chief Adviser TSP	Member
25.	Chief Adviser TSP	Member
26.	Chief Adviser TSP	Member
27.	Chief Adviser TSP	Member
28.	Chief Adviser TSP	Member
29.	Chief Adviser TSP	Member
30.	Chief Adviser TSP	Member
31.	Chief Adviser TSP	Member
32.	Chief Adviser TSP	Member
33.	Chief Adviser TSP	Member
34.	Chief Adviser TSP	Member
35.	Chief Adviser TSP	Member
36.	Chief Adviser TSP	Member
37.	Chief Adviser TSP	Member
38.	Chief Adviser TSP	Member
39.	Chief Adviser TSP	Member
40.	Chief Adviser TSP	Member
41.	Chief Adviser TSP	Member
42.	Chief Adviser TSP	Member
43.	Chief Adviser TSP	Member
44.	Chief Adviser TSP	Member
45.	Chief Adviser TSP	Member
46.	Chief Adviser TSP	Member
47.	Chief Adviser TSP	Member
48.	Chief Adviser TSP	Member
49.	Chief Adviser TSP	Member
50.	Chief Adviser TSP	Member
51.	Chief Adviser TSP	Member
52.	Chief Adviser TSP	Member
53.	Chief Adviser TSP	Member
54.	Chief Adviser TSP	Member
55.	Chief Adviser TSP	Member
56.	Chief Adviser TSP	Member
57.	Chief Adviser TSP	Member
58.	Chief Adviser TSP	Member
59.	Chief Adviser TSP	Member
60.	Chief Adviser TSP	Member
61.	Chief Adviser TSP	Member
62.	Chief Adviser TSP	Member
63.	Chief Adviser TSP	Member
64.	Chief Adviser TSP	Member
65.	Chief Adviser TSP	Member
66.	Chief Adviser TSP	Member
67.	Chief Adviser TSP	Member
68.	Chief Adviser TSP	Member
69.	Chief Adviser TSP	Member
70.	Chief Adviser TSP	Member
71.	Chief Adviser TSP	Member
72.	Chief Adviser TSP	Member
73.	Chief Adviser TSP	Member
74.	Chief Adviser TSP	Member
75.	Chief Adviser TSP	Member
76.	Chief Adviser TSP	Member
77.	Chief Adviser TSP	Member
78.	Chief Adviser TSP	Member
79.	Chief Adviser TSP	Member
80.	Chief Adviser TSP	Member
81.	Chief Adviser TSP	Member
82.	Chief Adviser TSP	Member
83.	Chief Adviser TSP	Member
84.	Chief Adviser TSP	Member
85.	Chief Adviser TSP	Member
86.	Chief Adviser TSP	Member
87.	Chief Adviser TSP	Member
88.	Chief Adviser TSP	Member
89.	Chief Adviser TSP	Member
90.	Chief Adviser TSP	Member
91.	Chief Adviser TSP	Member
92.	Chief Adviser TSP	Member
93.	Chief Adviser TSP	Member
94.	Chief Adviser TSP	Member
95.	Chief Adviser TSP	Member
96.	Chief Adviser TSP	Member
97.	Chief Adviser TSP	Member
98.	Chief Adviser TSP	Member
99.	Chief Adviser TSP	Member
100.	Chief Adviser TSP	Member

Functions and Powers of Executive Committee:-

1. It shall be the responsibility of the Executive Committee to endeavour to achieve the objectives of the Society and to discharge all its functions. The Executive Committee shall exercise all administrative and financial powers including power to create posts of all descriptions and make appointments thereon in accordance with regulations.
2. The Executive Committee shall have under its control the management of all the affairs and funds of the Society.
3. The Executive Committee shall have the powers and responsibilities in respect of the following:
 - (a) To frame regulations with the approval of the State Government.
 - (b) To frame annual or regular or any other laws for the conduct of activities of the Society in furtherance of its objectives with the approval of the Governing Council.
4. The Executive Committee shall have the powers to enter into arrangements with other public or private organizations or individuals for furtherance of the objectives of the Society.
5. The Executive Committee shall have the powers for securing and accepting endowments, grants-in-aid, donations, or gifts to the Society on mutually agreed terms and conditions of gifts shall not be inconsistent or in conflict with the objectives of the Society or with provisions of laws relating to the objectives of the Society or with provisions of laws relating to the objectives of the Society.

Continued: 3A-

-2-

6. The Executive Committee shall have the powers to take over and/or acquire in the name of the Society by purchase, gift or otherwise from Government and other public bodies or private individuals, any movable and immovable properties in the State or elsewhere or other funds together with any attendant obligation and engagement not inconsistent with the objectives of the Society and the provisions of these rules.
7. The Executive Committee shall take all steps to establish Project Management Unit or any other institution at State Level, District Level and Block Level required for the successful implementation of the project.
8. The Executive Committee shall have the powers to sell or give or lease any movable or immovable property of the Society provided, however, that no asset of the Society created out of Govt. grants shall without the approval of the Government be disposed off, encumbered or utilized for purpose other than those for which the grant was sanctioned.
9. The Executive Committee shall also:

- (a) Consider and approve the Annual Plan of operation of Project "Himachal Pradesh Crop Diversification Promotion Project."
 - (b) Consider and approve the Annual budget of the project.
 - (c) Sort out problems in the implementation of the project.
 - (d) To ensure coordination with the line Departmental Agencies for the Project activities.
 - (e) To review the implementation of the activities under the projects.
 - (f) Perform any other works assigned by the Government.
10. The Executive Committee may delegate to the Chairman, Project Director or any of its members and/or to a Committee/ Group or any other officer of the Society /Project such administrative and financial powers and impose such duties as it deems proper and also duties that are to be exercised or discharged in furtherance of the objectives of the Society.

By Order
Sd/-
Additional Chief Secretary (Agr.) to the
Government of Himachal Pradesh



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



5. ABOUT THE PROJECT (PHASE-II)

Mee

- **Meetings of Governing Council and Executive Committee:** First GC meeting was held on 20th March, 2022 under the chairmanship of Hon'ble Agriculture Minister, Govt. of Himachal Pradesh, wherein many important decisions for steering up of second Phase of the project were taken. First Executive Committee meeting was held on 5th May, 2021 under the chairpersonship of Smt. Nisha Singh, Additional Chief Secretary (Agriculture), Govt. of Himachal Pradesh and second Executive Committee meeting was held on 16th November, 2021 under the Chairmanship of Dr. Ajay Sharma, Secretary (Agriculture), Govt. of Himachal Pradesh. In these meeting the status of preparedness as well as pace of ongoing activities was discussed.
- As per approval of EC and GC, PMUs were established to carry out Phase-II project in all the 12 districts. Office space and vehicles were hired for all the PMUs as per approval of EC.
 - Process for hiring of Chartered Accountant, Selection of Architect for Training centres and Agency for Survey Investigation and Design, DPR preparation were completed as per approval of EC & GC.
 - Process for procurement of Project Management Consultant as per JICA procurement guidelines was stated by EOJ publication on 22nd March, 2021 and evaluation of bids completed in March, 2023 and submitted to JICA India for concurrence.
 - For smooth, efficient and effective implementation of project activities, the EC accorded its approval for enhancing administrative, technical and financial powers to Project Director, District Project Managers and Block Project Managers.
 - Job chart of staff engaged through outsource agency was also approved by EC.
 - Conducted Baseline survey through outsource agency (AMS) to update present qualitative monitoring indicators.

Chairs of Executive Committee (In 2021-22 onward)



Sh. Rakesh Kanwar,
(IAS: 2007),
Secy (Agr) from Jan 1, 2022 ...



Sh. Ajay Kr Sharma
(IAS: 2003), Secy (Agr) from June 3, 2021
till Dec 31, 2021



Smt. Nisha Singh
(IAS: 1987) ACS (Agr) from Nov 1, 2020
till June 2, 2021



5. ABOUT THE PROJECT (PHASE-II)

Governing Council notification:

- **Hiring of expert agency for preparing DPRs:** Egis India Consulting Engineers Pvt. Ltd. was hired for Survey, Investigation, Design and Preparation of Detailed Project Report, under HPCDP Phase-II through national competitive bidding process. The agreement with the concerned agency was signed on dated 23.10.2021. Out of 296 Detailed project reports (DPRs) to be prepared, Feasibility, Survey & Investigation completed in 60 sub project sites & funds to the tune of ₹ 100 lakh utilized during the year. 42 Nos. DPRs have been prepared by the agency upto March, 2022.
- The MoU between the Department of Agriculture, HP through the Project Director, HPCDP and CSKHPKV Palampur, Distt. Kangra through Director of Research, has been signed on dated 24.05.2021. The purpose of this agreement was to execute two activities i.e., R & D support projects & development of Seed Production facility. Under R&D support, funds to the tune of ₹ 90.15 lakh for 11 research and development projects have been utilized by CSKHPKV Palampur for development/refinement of technology. Under Infrastructure development SAU has utilized ₹ 250 lakhs to develop seed multiplication farm at University Campus Palampur.

S.No.	Components	Funds utilised (₹ in lakh)
A	Research and Seed Production	
	R & D support	
1	Multi-location testing of CMS based hybrids of cauliflower in Himachal Pradesh	6.19
2	Multi-location testing of GMS based bacterial wilt resistant hybrids of chilli in Himachal Pradesh	6.66
3	Generation of double haploid through induced androgenesis in head cabbage (Brassica oleracea var. capitata)	6.28
4	Multilocal testing and validation of newly developed bacterial wilt resistant and high yielding bell pepper lines/hybrids in H.P.	5.00
5	Multilocal testing and validation of newly developed yellow vein mosaic virus resistant and high yielding okra lines/hybrids in H.P.	5.00
6	Development and promotion of management technology against insect-pests of brinjal	10.00
7	Management of root-knot nematode, Meloidogyne incognita in cucumber under protected cultivation	10.00
8	Assessment, validation and refinement of disease management technology for vegetable crops	11.00
9	Enhancing rice production in high-altitude areas of Himachal Pradesh by development and popularization of high yielding, cold tolerant japonica rice varieties through farmers' participatory approach.	15.02
10	Genetic amelioration of Kala zeera (Bunium persicum Boiss) using tissue culture/micropropagation approach	7.50
11	Popularization of potential A B C crops of North Western Himalayas as vegetable and seed under organic and natural farming conditions through participatory plant breeding. (A B C= Amaranthus, Buckwheat and Chenopodium).	7.50
	Total of A	90.15
B	Infrastructure development at SAU for vegetable seed production-2nd year phasing	250.00
	Total (A+B)	340.15



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



5. ABOUT THE PROJECT (PHASE-II)

- The MoU between the Department of Agriculture (HP) through the Project Director, HPCDP and HPSAMB through Managing Director, Vipnan Bhawan, Shimla, H.P. has also been signed on dated 24.05.2021 with the purpose of Modernizing facilities and equipment in Mandis with the project funds. Facilities at 13 market yards modernized by utilizing ₹5.40 crore.

Sr.No.	Name of Mandis	Funds utilized (₹ in lakh)
1	Kangra/Jassor	540.00
2	Kangra/Passu	
3	Kullu & LS/Chauribihal	
4	Kullu & LS/Patlikuhal	
5	Kulu & LS/Khegsu	
6	Mandi/Takoli	
7	Shimla & Kinnaur/Bhattakuffar	
8	Shimla & Kinnaur/Tapri	
9	Sirmaur/Ghandoori	
10	Sirmaur/Khairi	
11	Solan/solan	
12	Solan/Vaknaghat	
13	Solan/Kunihar	

- Community sensitization/KVA formation: 62 no. farmer/community awareness camps were organized in sub project sites to sensitize the community about the project. 60 Krishak Vikas Associations (KVAs) were formed during the year and 31 of these KVA got registered under HP Society Act, 2006.
- For operational expenses funds amounting to ₹5.0 lakh utilized at SCTC, Palampur



- ₹244 lakh spent on procurement of equipment and tools & ICT related equipment for Project Management Units.



HIMACHAL PRADESH AGRICULTURE DEVELOPMENT SOCIETY



H.P. CROP DIVERSIFICATION PROMOTION PROJECT

SOCIETY HQ : HAMIRPUR - 177001, H.P.

PBX (Tele-fax) +91-01972-223059

Emails: pdcdp-hp@nic.in & pmucdp-hp@nic.in

www.hpcdp.nic.in

HIMACHAL PRADESH AGRICULTURE DEVELOPMENT SOCIETY

ANNUAL REPORT 2022-23



H.P. Crop
Diversification
Promotion Project
JICA-ODA



ALWAYS COMMITTED TO THE PROSPERITY OF FARMERS



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



SOCIETY HQ : HAMIRPUR - 177001, H.P.

PBX (Tele-fax) +91-01972-223059

Emails: pdcdp-hp@nic.in, pmucdp-hp@nic.in

ACKNOWLEDGEMENT

In June 2021, Phase-II of the H.P. Crop Diversification Project (HPCDP), supported by the Japan International Cooperation Agency (JICA), commenced with Rs. 1010.60 crore following the successful completion of Phase-I in five districts of Himachal Pradesh. The project is being executed under the HP Agriculture Development Society, established under the Society Registration Act of 2006 (Registration No. 43/2011 dated 07-02-2011). The society functions through the Governing Council/Body, chaired by the Hon'ble Agriculture Minister to the GoHP, and the Executive Committee, headed by Secretary (Agri.) to the GoHP.

The report presents the project's activities undertaken in the year 2022-23 across twelve districts of Himachal Pradesh. Within the report, an overview of the progress achieved during this period is presented. My gratitude knows no bounds as I extend my heartfelt appreciation to the Hon'ble Agriculture Minister, whose distinguished leadership as the Chairman of the Governing Council of the Society imparts unwavering inspiration, guidance, and support to each of us, fueling our dedication to the welfare of farmers and the agricultural community. Likewise, our appreciation extends to the Chief Representative of JICA-India, whose counsel, invaluable suggestions, and unwavering backing have catalysed us to revisit our plans, fortify strategies, and harness amplified technical support.

I extend thanks to consultants, service providers, colleagues, and field officers for their technical support and assistance in preparing this report. Special thanks goes to the Department of Agriculture for supplying key staff to the project. This report showcases achievements and accomplishments in the year 2022-23 and acknowledges the Government of Himachal Pradesh (GoHP), Government of India (GoI), and JICA.

Dr. Sunil Chauhan

Project Director

HPCDP JICA



Table of Contents

	Page No.
1. INTRODUCTION.....	4
2. ABOUT THE SOCIETY.....	5
Main objectives.....	5
Powers & Functions of the Governing Council	5-6
Powers & Functions of the Executive Committee.....	6-7
3. ABOUT JICA.....	8
4. ABOUT THE PROJECT (Phase-II)	9
Management Units of the Project	9
State Project Management Unit (SPMU): -	9-10
District Project Management Unit (DPMU): -	11
Block Project Management Unit (BPMU): -	11-12
Brief Background of HPCDP	12
Project Description:	12
Features of Phase-II Project:	12
5. Project Cost	13
6. Project Components.....	13
7. Qualitative and Quantitative Indicators of the project	14
8. Physical & Financial Status	14-17
9. Major Achievements/ Project Progress.....	18-29
Photographs of JICA Mission	30
Farmers Support Activities under HPCDP JICA ODA Phase-II	30-31
Baseline surveys conducted at various subprojects under HPCDP JICA ODA-Phase-II	32
Survey, Investigation and Design works under HPCDP JICA ODA Phase-II	33



1. INTRODUCTION

Agriculture in Himachal Pradesh

Himachal Pradesh is a hilly state located at the foot of the Western Himalayas, with an area of 5.57 million hectares and a population of over 7 million approximately.

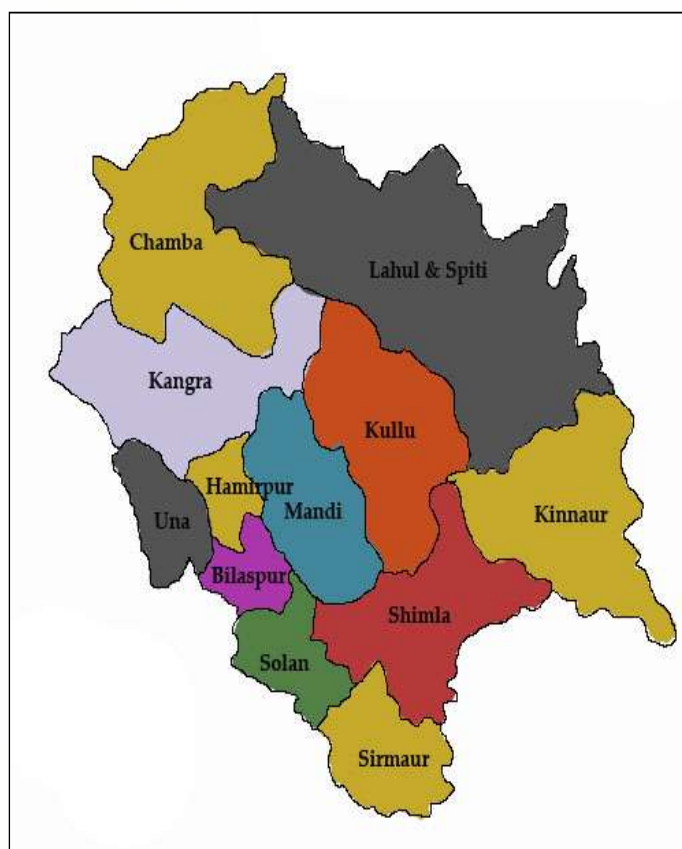
Nearly 70 percent of working population in the state is engaged in agriculture, but agriculture accounts for only 10.4 percent of the gross state domestic product. The low agriculture productivity partly attributes to the fact that the area available for growing crops is limited to 10 percent of the total land of the state, due to the hilly and tough terrain, thus more than 87 percent of the farmers are marginal and small landholders with average holding size of < 1.00 Ha. Also, only 20 percent of the cultivable area has irrigation facilities, while the rest has to depend on the rains.

Thus, majority of the farmers in the state remain engaged in traditional cultivation of the food grains, not being able to diversify to more profitable commodities, such as vegetables and high value crops.

In order to boost the agriculture development and enhance the farm income in the rural areas, it is, therefore, important to increase the productivity of the existing cultivated area, through shifting from self-subsistence crop cultivation to diversified agriculture, by adopting cash crops such as vegetables etc. suitable for the areas. As such overcoming the major constraints of limited irrigation facilities, farm access roads and insufficient marketing facilities, is highly essential.

H.P. LAND USE AT A GLANCE

	Area (Ha)
Total Geographical Area	55,67,300
Forests	11,05,997
Barren & Un-cultivated lands	7,83,404
Land put to non-agricultural use	3,48,649
Permanent pastures	15,03,833
Cultivable waste lands	1,28,224
Other fallow lands	22,109
Current fallows	59,991
Net area sown	5,38,412
Area sown more than once	4,02,185
Average annual rainfall	1075 mm
Gross irrigated area	1,91,000
Net irrigated area	1,09,940
Total cropped area	9,40,597



2. ABOUT THE SOCIETY

Himachal Pradesh Agriculture Development Society (HPADS) was established as an autonomous organization outside the Department of Agriculture, H.P., on Feb. 7, 2011 under HP Society Registration Act, 2006 for smooth & effective implementation of the JICA assisted project. The society consists of the following bodies: -

- Governing Council (The General House)
- Executive Committee
- Project Management Units

The Governing Council in its first meeting held on January 6, 2011, approved the memorandum of association, Rules & Regulations of HPAD Society and subsequently, its registration under the Act, the instrument of society came into force.

Main objectives

- The society is an independent and autonomous body with the main aim to enhance farmer's income through sustainable and diversified farming system in Himachal Pradesh.
- To implement the project "Himachal Pradesh Crop Diversification Promotion Project" in Himachal Pradesh with due diligence and efficiency and in conformity with appropriate powers and with due regard to social and environment guidelines, acceptable to stakeholders and the govt. of Himachal Pradesh in accordance with the MOU signed between the funding agency, GOI and GOHP.

After the successful implementation and completion of Phase-I of HPCDP Project, the Govt. of H.P. renotified the Governing body and Executive Committee of Himachal Pradesh Agriculture Development Society (HPADS) for implementation of Phase-II of H.P. Crop Diversification Promotion Project, JICA-ODA on 5th March, 2021

Powers & Functions of the Governing Council

The Governing Council have the following powers and functions:

1. Observe the provisions of the memorandum of Association rules and such instruction of Govt. of H.P. in department dealing with the affairs of the Himachal Pradesh Agriculture Development Society, as may be issued, from time to time.
2. Exercise general control and issue such directions for the efficient management and administration of the affairs of the HPADS, as may be necessary.
3. Nominate members of the Executive Committee in accordance with rules.
4. Approve the annual budget of the HPADS, drawn up by the Executive Council and approve the budget for submission to the Govt. of H.P., for sanction of grants.



5. Consider the annual report approved by the Executive Committee.
6. Consider the balance sheet and audited accounts.
7. Add and amend, with prior approval of the Govt. of H.P., rules of the HPADS.
8. Form bye-laws, not inconsistent with these rules and the memorandum of association for the management, administration & regulation of the business of the HPADS for the furtherance of its objectives.
9. To constitute committees, with or without powers to control, namely:
 - i. Executive Committee.
 - ii. Any other committee deemed necessary.
10. To perform such other functions as are entrusted to it, under these rules.
11. The Governing Body may by resolution delegate the powers to its chairman or of any Standing Committee or the Project Director, State PMU or to any other officer of the HPADS, such of its powers for the conduct of business, as it may deem fit.



Hon'ble Agriculture Minister
to the GoHP chairman of
Governing Council

Powers & Functions of the Executive Committee

The Executive Committee shall have the following powers and functions:

1. It shall be the responsibility of the Executive Committee to endeavour to achieve the objective of the Society and to discharge all its functions. The Executive Committee shall exercise all administrative and financial powers including powers to create posts of all descriptions and make appointments, thereon, in accordance with regulations.
2. The Executive Committee shall have under its control the management of all the affairs and funds of the Society.
3. The Executive Committee shall have the powers and responsibilities in respect of the following:
 - i. To frame, regulation with the approval of the State Government.
 - ii. To frame amend or repeal any bye-laws for the conduct of activities of the Society, in furthering its objectives with the approval of the Governing Council.
4. The Executive Committee shall have the powers to enter into agreement(s) with other public or private organizations or individuals for furtherance of the objectives of the society.



5. The Executive Committee shall have the powers for securing and accepting endowments, grants-in-aid, donation, or gifts to the Society on mutually agreed terms and conditions, of which shall not be inconsistent or in conflict with the objectives of the Society or with provisions of these rules.
6. The Executive Committee shall have the powers to take over and/ or acquire in the name of the Society by purchase, gift or otherwise from Government and other public bodies or private individuals, any movable and immovable properties in the State or elsewhere or other funds together, with any attendant obligation and engagement, not inconsistent with the objectives of the Society and the provisions of these rules.
7. The Executive Committee shall take all steps to establish Project Management Unit or any other institution at State Level, District Level and Block Level required for the successful implementation of the project.
8. The Executive Committee shall have the powers to sell or give on lease any movable or immovable property of the Society provided, however, that no asset of the Society created out of Govt. grants shall without the approval of the Government be disposed off, encumbered or utilized for purpose other than those for which the grant was sanctioned.
9. The Executive Committee shall also:
 - i. Consider and approve the Annual Plan of Operation of Project “Himachal Pradesh Crop Diversification Promotion Project”.
 - ii. Consider and approve the Annual budget of the project.
 - iii. Sort out problems in the implementation of the project.
 - iv. To ensure coordination with the line Departments/ Agencies for the project activities.
 - v. To review the implementation of the activities under the project.
 - vi. Perform any other works assigned by the Government.
10. The Executive Committee may delegate to the Chairman, Project Director or any of its members and/or to a Committee/Group or any other officer of the Society/project such administrative and financial powers and impose such duties as it deems proper and also duties that are to be exercised or discharged in furtherance of the objectives of the society.



**Agriculture Secretary
to the GoHP chairman of
Executive Committee**



3. ABOUT JICA

The Japan International Cooperation Agency (JICA) is a governmental agency that delivers the bulk of Official Development Assistant (ODA) for the Government of Japan. It is chartered with assisting economic & social growth in developing countries and the promotion of international cooperation. JICA has its headquarters in Tokyo, Japan.



Japan International
Cooperation Agency
(JICA)



Established on October 1, 2003, under an Act (Act No. 136, 2002) of the Incorporated Administration Agency – JICA aims to contribute to the promotion of international cooperation as well as the sound development of Japanese and global economy by supporting the socio economic development, recovery or economic stability of developing regions. JICA's version is "Inclusive & Dynamic Development".

JICA has four missions, which include

- Addressing the global agenda,
- Reducing poverty through equitable growth,
- Improving governance, &
- Achieving human security.

JICA has following four strategies

- Integrated assistance
- Seamless assistance
- Promoting development partnerships
- Enhancing research & knowledge sharing

Presently JICA-INDIA is being headed by Mr. SAITO Mitsunori, as the Chief Representative, effective on August 24, 2021; who took over from Mr. KATSUO Matsumoto.

[\(https://www.jica.go.jp/india/english/\)](https://www.jica.go.jp/india/english/)



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



4. ABOUT THE PROJECT (Phase-II)

Keeping in view the achievements of Phase-I, it was envisaged to prepare and propose Phase-II of HPCDP. Subsequently, the DPR was prepared in Oct., 2018 and submitted to Gol for approval. JICA conducted preparatory survey between July-Dec, 2020 through online mode with the help of DoA & HPCDP Phase-I Team. The appraisal of the project was done by JICA mission in Dec., 2021. The Minutes of Discussion (MoD) were signed in February, 2021 between GoHP, Gol and JICA. The loan agreement was signed in March, 2021. To implement Phase-II of Project in the entire state, State Project Management Unit (SPMU), 4 District Management Units (DPMU) and 14 Block Project Management Units (BPMU) have been established under the HPADS.

It was decided that the main implementing and coordinating agency for project remains “Himachal Pradesh Agriculture Development Society”, constituted under Phase-I. In the nine years of project implementation, HPCDP Phase-II will incur funds amounting to ₹ 1010.60 crore in twelve districts of Himachal Pradesh through State Project Management Unit with its headquarter at Hamirpur, for the purpose of sustainable crop diversification by development of minor irrigation facilities and farm access roads as well as improvement of extension service function including vegetable cultivation and value chain & marketing. The expenditure against the project components will be incurred at the state, district and block levels in all the 12 districts viz; Hamirpur, Bilaspur, Kangra, Mandi, Una, Solan, Kullu, Shimla, Kinnaur, Chamba, Sirmour and Lahaul & Spiti.

Management Units of the Project

H.P. Crop Diversification Promotion Project, Phase-II is covering all the 12 districts of Himachal Pradesh. The project focuses on 306 sub-projects, where irrigation infrastructure being created and various farmers support activities being undertaken.

The project consists of the following units.

State Project Management Unit (SPMU): -

Number of Units: One

Location: Agriculture Complex, District Hamirpur

Tele-Fax: 01972-223059

E-mail address: pdcdp-hp@nic.in & pmucdp-hp@nic.in

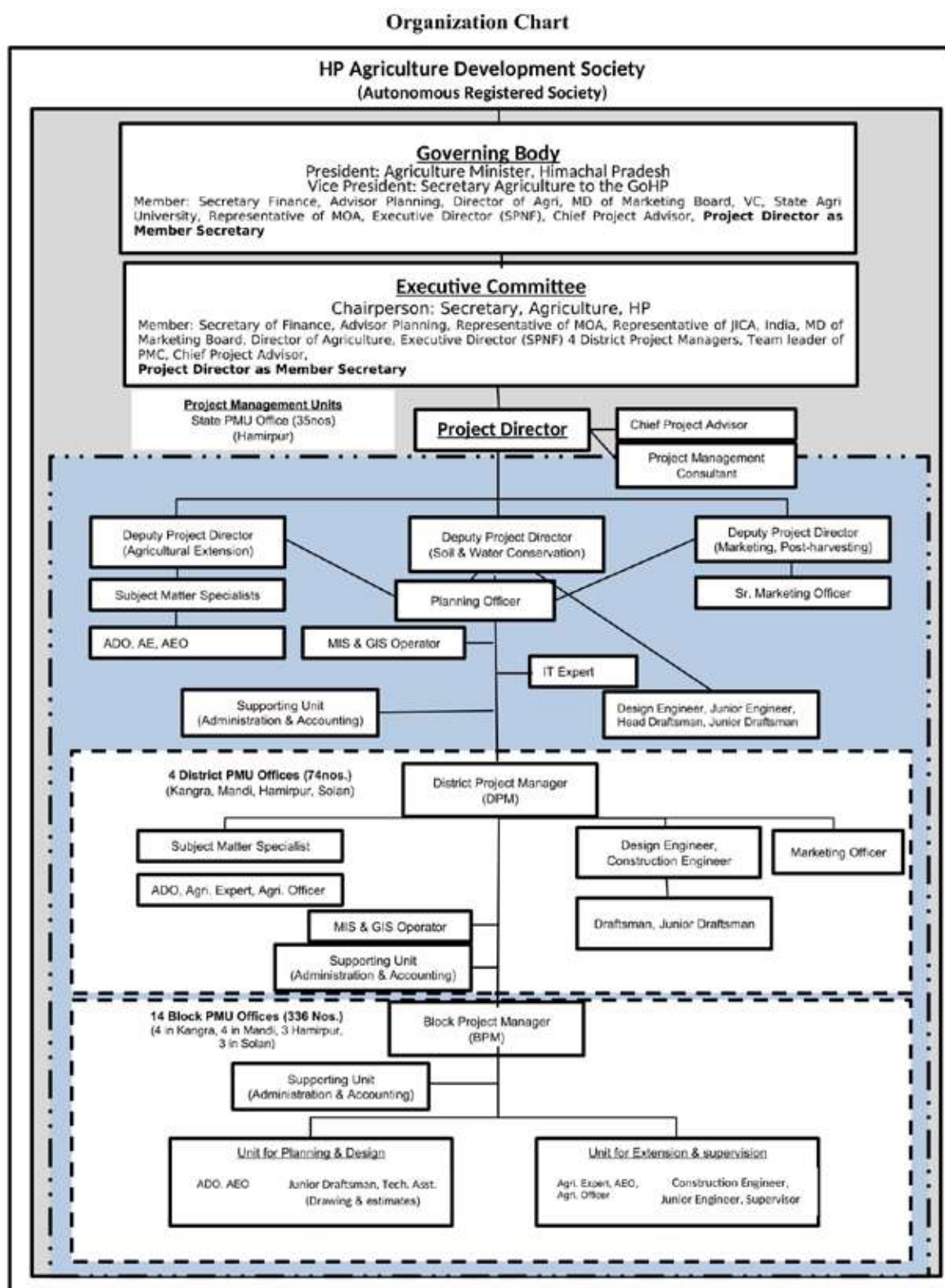
Website: hpcdp.nic.in

Functions of the State PMU: -

The State PMU is entrusted with the overall managerial charge of implementation of the project. State PMU lead the overall project planning, project coordination including that with JICA overall procurement management, financial management including collating the expenditure statements from District level PMUs and Block level PMUs and consolidate these for submitting the reimbursement claims to JICA, monitoring and evaluation, and preparation of reports such as Quarterly Progress Reports and Project Completion Report etc.



Organogram of the HPADS for HPCDP (Phase-II), JICA-ODA



District Project Management Unit (DPMU): -

Four district PMUs established in the District of Kangra (Palampur), Mandi, Hamirpur & Solan

i. District Project Management Unit, Hamirpur (covers Districts Hamirpur, Bilaspur & Una)

Location: District Project Management Unit, HPCDP JICA-ODA, Phase-II, Hamirpur Agriculture Complex, District Hamirpur – 177001 H.P.

E-mail address: dpmcdp-ham-hp@nic.in

ii. District Project Management Unit, Palampur at Kangra (covers Districts Kangra & Chamba)

Location: District Project Management Unit, HPCDP JICA-ODA, Phase-II, Palampur

Top Floor, Bio Control Laboratory, Palampur, District Kangra -176062 H.P.

E-mail address: dpmcdp-kan-hp@nic.in

iii. District Project Management Unit, Mandi (covers Districts Mandi, Kullu, Lahul & Spiti)

Location: District Project Management Unit, HPCDP JICA-ODA, Phase-II, Mandi Agriculture Complex, Jawahar Nagar, Mandi -175001 H.P.

E-mail address: dpmcdp-man-hp@nic.in

iv. District Project Management Unit, Solan (covers Districts Solan, Shimla, Sirmour & Kinnour)

Location: District Project Management Unit, HPCDP JICA-ODA, Phase-II Solan Village Kailer P.O. Saproon Tehsil & District Solan H.P. 173211

E-mail address: dpmcdp-sol-hp@nic.in

Functions of DPMU: -

The main functions of District PMUs are to conduct district level monitoring and supervision by PDCA (Plan-Do-Check-Action) cycle management as well as utilizing the MIS and GIS systems and undertake quality control measure of work to be done by Block PMUs. They shall also review, the detailed project design and other reports to be submitted to State PMU for final approval.

Block Project Management Unit (BPMU): -

Number of Units: 14

Locations:

Four under DPMU Kangra viz., Palampur, Kangra, Dharamshala & Chamba

Four under DPMU Mandi viz., Mandi, Kullu, Gohar & Sarkaghat

Three under DPMU Hamirpur viz., Hamirpur, Bilaspur & Una

Three under DPMU Solan viz., Solan, Nahan & Rampur



Functions of BPMU: -

Block PMU has following major functions:

- Community organization and their capacity building.
- Sub project level planning for project outputs in the shape of DPRs, Sub-project Development Plans, including Crop Diversification Plan & Livelihood Development Plans.
- Supervision, quality and progress control of infrastructure development at sub-project sites.
- Leading the communities/ beneficiary farmers towards project outputs by relevant support through various project interventions.

Brief Background of HPCDP

DoA prepared and submitted detailed project report (DPR) through H.P. Agri. Development Society to Gol:	October, 2018
MoD signed	February, 2021
Discussion with Contact Mission, Fact Finding Mission, Appraisal Mission and Loan Agreement Signed (ID-P290)	26 th March, 2021
Loan Effectuation	21 st July, 2021
Loan disbursement closing date	12 years after loan effectuation
Launching of Phase-II Project	16 th November, 2021

Project Description:

Project Name	Himachal Pradesh Crop Diversification Promotion Project (Phase-II)
Project Area	All 12 Districts of Himachal Pradesh
Project Duration	9 Years, (2021-2029)
Objective	Promoting sustainable crop diversification, increasing agricultural productivity and improving farm incomes.
Project Scope	To establish crop diversification model in 7 new districts, and expand the model to 5 Phase-I districts.

Features of Phase-II Project:

1. To promote crop diversification through development of necessary infrastructure in the Agriculture sector. Construction of infrastructure facilities like minor irrigation, farm road, solar pumping, solar/ electric fencing etc.
2. Training, capacity building of farmers/ extension workers.
3. Implementation of the project through public participation system by Krishak Vikas Associations (KVAs), Self Help Groups, Farmer Groups & Focused Groups.
4. Enhancing opportunities for improving livelihoods through dairy, beekeeping, backyard poultry, service sector, mushroom, shiitake mushroom cultivation and farm fish culture.
5. Promotion of innovative activities like nutritional reforms, etc.



Himachal Pradesh Agriculture Development Society

6. Ensuring a strong demand driven marketing system and setting up of 10 FPOs.
7. Capacity building of the community to take over the operation & maintenance of created Infrastructure.
8. Institutional development by strengthening agriculture department, strengthening extension service work and baseline survey, impact assessment, etc.

5. Project Cost:

	(Rs. in Crore)	(Mill. Yen)
Total Project cost	1010.60	14148
JICA Portion (Loan)	807.30	11302
State Share	203.30	2846

6. Project Component:

Name of component	Activities	Layout (₹ in Crore)
Infrastructure Development	Development of Minor Irrigation (FIS 191, LIS 94, TWIS 11, Convergence with existing I & PH schemes 10, Total 306), Micro Irrigation Systems, Catchment Area Treatment, Solar Pumping Systems, Farm Access Roads, Solar, Electric, Barbed and Chain Link Fencing, Infrastructure Development Support, Surveying, Testing and Designing.	330.72
Farmer Support Component	KVA capacity building, training on vegetables, food crops and value addition, agricultural machinery, development of 3 model seed farms, 11 research projects, small poly/net houses, tunnels, soilless farming, soil testing kits, plastic mulches and anti-hail nets, Support for livelihood through Poultry, Dairy, Fisheries, Mushroom, Shiitake Mushroom, Bee keeping, Service Sector Entrepreneurs, nutrition improvement (kitchen garden etc.) shall be undertaken.	108.50
Value Chain and Market Development	Formation of 10 FPOs, modernization of facilities in APMC	63.30
Institutional Development	Baseline Survey, Medium Term and Terminal Evaluation, Gender Mainstreaming	157.50
Price Escalation		56.90
Physical Contingency		35.80
Consulting Services @ 0.15 % & 1 INR = 1.40 JPY		54.60
Total JICA ODA Loan @ 1.15 % and 1 INR = 1.40 JPY		807.30
State's share (Non-Eligible) 20%		203.30



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



7. Qualitative and Quantitative Indicators of the project:

Item	Unit	Current Status	Post Project Status
Irrigation Beneficiary Area	Ha.	1745.26	7933
Micro Irrigation	Ha.	-	560
Miscellaneous area under vegetables in (both seasons)	Ha.	576.72	6944
Vegetable cultivating farmer	No.	3100	9000
increase in yield	M/T/Ha.		
Vegetables	M/T/Ha.	10.17	24.00
Cereal		2.00	2.83
Gross Annual Agricultural Income	₹/Ha.	62,605	2,50,000
Formation of FPOs	No.	-	10
Solar pumping unit	No.	-	83
Number of SHG established	No.	-	100

8. Physical & financial status:

Physical & Financial Progress Report of HPCDP (Phase-II), JICA-ODA for the Financial Year 2022-23

Physical & Financial Progress of External Aided Project for the Financial Year 2022-23						
(Rs. In Lakhs)						
S. N.	Item	Unit	Targets for APO 2022-23		Achievements 2022-23	
			Physical	Financial	Physical	Financial
1. Infrastructure Development						
1.1.1	Minor Irrigation			1.29		1.21
1.3.2	Survey, Investigation, Design & Estimation (Preparation of DPR)	No.	120	178.78	96	126.88
Total (1)			120	180.07	96	128.09
2. Farmers' Support Component						
2.1	Formation and Strengthening KVA					
2.1.1	Awareness Camp involving Community	No. of training	142	8.29	139	8.12
2.1.2	Formation and formalization of KVAs					
1	Workshop of group to develop objectives and norms	No. of training	114	3.72	101	3.31



Himachal Pradesh Agriculture Development Society

2	Training to MC members on role and responsibility	No. of training	6	2.76	6	2.76
3	Exposure visit of MC members to KVA in other area of HP	No. of training	8	6.27	8	6.27
2.3	Research and Seed Production					
2.3.1	R & D support (11 Sub projects)-2nd year phasing	No.	Under Progress (11)	93.35	Under Progress (11)	93.35
2.3.2	Infrastructure development at SAU for vegetable seed production-2nd year phasing	No.	Under progress (1)	197.80	Under progress(1)	197.80
2.4	Innovative activities					
2.4.1	Establishment of centre of excellence for vegetable nursery production(SAU)- 1st year phasing	No.	Under progress (1)	15.50	Under progress(1)	14.30
2.4.2	Trial for soil less cultivation/Fan Pad GH with vertical system- 1st year phasing	No.	Under progress (1)	21.48	Under progress(1)	21.48
2.5.2	Mushroom cultivation on cost sharing basis 80:20	No.	-	1.42	-	1.42
2.5.7	Promotion of Shiitake Mushroom Cultivation (Management Cost for SCTC)	No.	1	12.00	1	11.73
Total (2)				362.59		360.54
3.Value Chain and Market Development Component						
3.4	Modernizing facilities and equipment in Mandis	No.	Under Progress (13)	1350.00	Under Progress (13)	1185.53
Total (3)				1350.00		1185.53
4. Institutional Development Component						
4.1	Strengthening of DOA					
4.1.1	Recruitment of PMU Staff (Out-Source)	No.	1	570.07	1	456.93
4.1.2	Capacity Development of Project Staff on PDCA Cycle					
1	Orientation Workshop of PMU Staff	No.	-	0.38	-	0.38
2	Training of District & Block Project Managers on PIM, PRA and CDP	No.	1	0.45	0	0.00
3	Conceptual Training for PMU Staff on PDCA Cycle	No.	-	0.07	-	0.07



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



Himachal Pradesh Agriculture Development Society

4	Workshops to establish PDCA cycle	No.	0	0.00	0	0.00
5	Exposure Visits of PMU Staff (Other States)	No.	0	0.00	0	0.00
6	Peer Learning Workshop	No.	1	0.19	1	0.19
7	Organizing periodical review meetings, workshops etc.	LS	-	4.99	-	4.13
8	HRD training on Team building, leadership, Motivation/inspiration and Stress management.	No.	4	5.85	4	5.85
9	Agriculture Extension Training	No.	1	0.55	1	0.55
10	Engineering Training	No.	1	1.97	1	1.97
4.1.7	Procurement of ICT related equipment					
1	Procurement of general use IT equipment	LS	-	15.06	-	12.56
7	Hiring of Services for Development of software application	LS	-	0.11	-	0.11
4.1.8	Construction of Training Centers	No.	Under progress(2)	167.08	Under progress(2)	148.07
4.1.9	Procurement of Equipment and Tools to PMU					
1	Rented accommodation for office space for 2 DPMU	LS	-	7.50	-	6.81
2	Rented accommodation for office space for 10 BPMU	LS	-	18.20	-	16.62
3	Furniture & office-equipments, (New PMUs)	LS	-	21.17	-	21.17
4	Replacement/ updation of Furniture	LS	-	1.24	-	1.06
5	Transport facilities at PMU Procurement of 3 vehicles (SPMU 3) and hiring of 24 No. MUV (SPMU 2,DPMU08,BPMU 14), 20 no Motor cycles, Scooties 20 No	LS	-	108.56	-	91.54
6	Rental accommodation for extension officers (70 sites)	LS	-	3.27	-	2.90
7	Publicity events, public awareness materials, inaugural ceremonies of sub projects	LS	-	1.47	-	1.17
8	Hiring of support services	LS	-	9.54	-	9.54
11	Project Operational expenses	LS	-	16.90	-	15.18



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



Himachal Pradesh Agriculture Development Society

12	Countermeasures for COVID-19	LS	-	0.60	-	0.59
4.2	Strengthening of Extension Service Function					
4.2.1	Preparation of Information, Education and Communication (IEC) Material for Dissemination					
1	Posters	LS	-	0.50	-	0.00
2	Wall writings & fixing of posters	LS	-	0.00	-	0.00
4	Publication of handouts and manuals	LS	-	3.03	-	2.90
5	Preparation of video programs	LS	-	0.00	-	0.00
7	Farmers' fair in each cluster	LS	-	2.30	-	2.30
4.2.3	Capacity Development of Engineering Staff					
1	Application of the Guideline and Check list	No.	1	0.53	0	0.00
2	Data preparation and record keeping of pre-condition of each sub-projects.	No.	1	0.53	0	0.00
4.2.5	International/national/state level workshop/seminars	No.		0.00		0.00
3	State level workshop/seminars	No.	-	1.46	-	1.46
4.2.6	Overseas Training, Exposure/Study visits senior Project Staff	No.	2	81.79	2.00000	81.79
Total(4)				1045.38		885.85
Category A Total (1+2+3+4)				2938.05		2560.01
Category B Consultancy services				361.95		361.95
Category C Physical contingency				0.00		0.00
Grand Total of Eligible Portion(Category A+B+C)				3300.00		2921.97
Non Eligible						
Administrative cost				570.22		449.30
	Salary of DoA Staff			527.28		423.54
	TA			1.35		1.23
	Medical			2.91		2.83
	Office expenses			38.68		21.71
GST/Taxes/Front end fee/Import Tax and other taxes				129.78		88.66
Total of Non Eligible Portion				700.00		537.96
Grand Total (Eligible+Non-Eligible)				4000.00		3459.93



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



9. Major Achievements / Project Progress:

1. Infrastructure Development Component:

- Under this component, survey, investigation, planning, and designing work in 296 sub projects is in progress.
- The Detailed Project Reports (DPRs) for 156 sub-projects has been prepared involving concerned Krishak Vikas Associations (KVAs).
- The Project Management Consultant (PMC) has reviewed and made recommendations for 37 DPRs.
- The process of E-tendering started to select contractors for the construction of minor irrigation schemes across 36 sub-project sites.



Survey Work along with Egis Team at FIS Dhar to Kunana under BPMU Solan



Planning and Preparation of DPR at FIS Salli Bhaledh under BPMU Dharamshala



Display Board at Dhados under BPMU Bilaspur



Planning and Preparation of DPR at LIS Dhaneti Garlan under BPMU Palampur

2. Farmers Support Component:

Under Farmer Support Component, number of tasks were planned in APO which includes Awareness Camp involving Community, Formation and Formalization of KVAs, R & D support, Infrastructure development at SAU for vegetable seed production, Establishment of centre of excellence for vegetable nursery production, Trial for soil less cultivation/ Fan Pad GH with vertical system, Mushroom Cultivation on cost sharing basis 80:20 and promotion of Shiitake Mushroom.



- **Awareness Camp involving Community:** The primary objectives of the training programs were to enhance awareness among water user beneficiaries regarding project activities, crop diversification, project components, objectives, scope, operation, and maintenance of irrigation facilities, water management and equitable water distribution. The program also aimed to ensure that the participants were well-informed about the project's purpose and potential benefits. By the end of the financial year 2022-23, a total of 139 awareness camps were organized across various sub-project sites, with 13333 farmers being made aware during these camps by utilizing funds amounting to Rs. 8.12 lakhs.



Awareness camp involving Community at LIS Gharrat under BPMU Hamirpur



Awareness camp involving Community at FIS Nayi Kuhal under BPMU Palampur.

- **Formation and Formalization of KVAs:** Significant progress has been made in formalizing Krishak Vikas Associations (KVAs) across various Project Management Units (PMUs). An expenditure of Rs. 3.31 lakhs has been incurred up to March 2023. 101 group workshops were conducted to define KVA objectives and norms with active participation of 3,726 farmers. Additionally, six training sessions for KVA MC members were held across all DPMUs incurring an expenditure of Rs. 2.76 lakhs, involving 275 Management Committee (MC) members, focusing on clarifying their roles and responsibilities. In the training, the MC members were informed and apprised about different responsibilities of KVA members and likely issues they may face during the construction of irrigation facility and their role in monitoring the construction activity and quality control measures. Furthermore, eight exposure visits of MC members were planned and executed incurring expenditure of Rs. 6.27 lakhs, involving 84 MC members who visited functional KVAs in different areas of Phase-I project. As result of these efforts, a total of 180 Krishak Vikas Associations (KVAs) has been established, with 131 of them got registered under the HP Society Act 2006.





Training to MC members on Role & Responsibility at SPMU Hall, Hamirpur under DPMU Hamirpur



Workshop to Develop Objective and Norms at LIS Khatrod under BPMU Hamirpur

- **R & D support:** R & D support activities are allocated to SAU Palampur and the outcome of research results is monitored by PMU. In 11 ongoing R&D projects being executed by SAUs, project funds amounting to Rs. 93.35 lakhs utilized during the year and work is under progress. The summary of the R & D support activities is as follow:
 - ✓ Multi-location testing of CMS based hybrids of cauliflower in Himachal Pradesh
 - ✓ Multi-location testing of GMS based bacterial wilt resistant hybrids of chilli in Himachal Pradesh
 - ✓ Generation of double haploid through induced androgenesis in head cabbage (*Brassica oleracea* var. *capitata*)
 - ✓ Multilocal testing and validation of newly developed bacterial wilt resistant and high yielding bell pepper lines/hybrids in H.P
 - ✓ Development and promotion of management technology against insect-pests of Brinjal.
 - ✓ Management of root-knot nematode, *Meloidogyne incognita* in cucumber under protected cultivation
 - ✓ Assessment, validation and refinement of disease management technology for vegetable crops
 - ✓ Enhancing rice production in high-altitude areas of Himachal Pradesh by development and popularization of high yielding, cold tolerant japonica rice varieties through farmers' participatory approach.
 - ✓ Genetic amelioration of Kala Zeera (*Bunium persicum* Boiss) using tissue culture/micro propagation approach
 - ✓ Popularization of potential A B C crops of North Western Himalayas as vegetable and seed under organic and natural farming conditions through participatory plant breeding. (A B C= Amaranthus, Buckwheat and Chenopodium)



A view of project activities in tissue culture laboratory (androgenic regeneration of cabbage plants)



Demonstration of DPT-1 and DPT-2 in Sirmour District of Himachal Pradesh





Evaluation of different Kala Zeera collections at MAREC, Sangla



Evaluation of fungicides and bio-agents against diseases of Capsicum at village Baleta in district Hamirpur.

- Infrastructure development at SAU for vegetable seed production:** The development of a Model Seed Farm at CSKHPKV is near completion, with a fund utilization of Rs. 197.80 lakhs. The objectives of infrastructure development for vegetable seed production in the SAU is to establish the model seed production farm by utilizing/harnessing the maximum potential of University land resource by developing new farm area to put under quality seed production with irrigation facilities, other, related infrastructure and its protection against wild and stray animals. The target seeds are nucleus, breeder, foundation and certified/TL of vegetables, pulses, oilseeds, forage and grasses, spices and cereals. SAU will supply quality seeds to the farmers, which will support them to diversify the traditional cropping pattern as well as HRD in seed production of vegetables and other crops through training to farmers and enable them to produce the seeds at their own farms.



Seed Infrastructure development project (Dhobhi Ghaat Farm)



Seed Infrastructure development project (Dhobhi Ghaat Farm)



- **Establishment of centre of excellence for vegetable nursery production:** The total estimated budget for establishing the Center of Excellence for Vegetable Nursery Production is 60 lakhs, out of which 14.30 lakhs has been utilized for various activities, and remaining work is in progress. The objectives of this innovative initiative are to produce & multiply the quality planting material of different vegetable crops through soil less media, grafting and low tunnel techniques, disseminate skills among stakeholders related to seedling production, demonstrate the production of quality seedlings and promote the sale of high-quality seedlings at nominal rates.



Training cum Demonstration Programme at Panjala in Distt. Kangra



Healthy nursery production in growth chamber under CSKHPKV, Palampur

- **Promotion of Shiitake Mushroom:** Trials on Shiitake Cultivation at SCTC, Palampur started in April, 2022 and protocols for standard production technologies and cultivation practices suited to local conditions have been developed which has resulted in excellent quality & production of Shiitake Mushrooms. On an average one shiitake block can yield 800gm to 1kg fresh shiitake produce. Rs. 11.73 lakhs have been utilised at SCTC, Palampur during FY 2022-23. Cluster based approach for training to the farmers of different sub projects has been adopted and after standardisation of cultivation protocols, 25 no. farmers were provided 6 days comprehensive training on Shiitake cultivation. Shiitake mushroom being highly perishable having freshness span of 2-5 days at room temperature are being sun dried for increasing their shelf life and quality enhancement.



Training on "Cultivation of Shiitake Mushroom" at SCTC Palampur



Training on "Post Harvest Management of Shiitake" at SCTC Palampur



- Household Surveys & PRA exercises have been completed in 147 sub-projects. Analysis & interpretation of primary and secondary data collected from these sub-projects is in progress for preparing crop diversification and livelihood development plans.



Baseline survey at LIS Sidhpur under BPMU Sarkaghat



Baseline survey at FIS Chamruhal Kuhal under BPMU Palampur

3. Value Chain & Market Development

Ongoing construction efforts within 13 Mandis of APMC are focused on strengthening of market yards by modernizing facilities. The primary objective is to empower farmers and traders, enabling them for marketing of agricultural produce more efficiently and profitably. This effort has far-reaching impacts, benefiting the entire supply chain for vegetables and fruits, not only within Himachal Pradesh but also extending to regions beyond its borders. Amount of Rs. 17.255 crore has been utilized upto March, 2023 by the project through HPSAMB, Shimla, with the objective of upgrading designated APMC Market Yards by providing the primary space for farmers to display their produce for auction, ensuring a hygienic and regulated trading environment. Auction halls have been constructed to facilitate the trading process with seating arrangements for producers and farmers. Additionally, construction of boundary and protection walls has been done to provide security in the trading area and ensure the safety of the agricultural produce. Also Kisan Bhawans have been constructed which are equipped with facilities like meeting rooms, restrooms & stay arrangements of farmers who travel from afar places to trade at the AMPC. Shops in the APMC were also constructed which serves as door steps market facility for farmers and traders.

The detail of the upgraded Sub Market Yards along with utilized amount up to March 2023 is as follows:

Sr. No.	Name of Sub Market Yard	Expenditure upto March, 2023 (in lakh)
1	Sub Market Yard Kangra/Jassor	72.68
2	Sub Market Yard Kangra/Passu	86.59
3	Sub Market Yard Kullu & LS/ Chauribihal	174



Himachal Pradesh Agriculture Development Society

Sr. No.	Name of Sub Market Yard	Expenditure upto March, 2023 (in lakh)
4	Sub Market Yard Kullu & LS/ Patlikuhal	45
5	Sub Market Yard Kullu & LS/Khegsu	9
6	Sub Market Yard Mandi/Takoli	264
7	Sub Market Yard Sirmour/ Nohradhar	59
8	Sub Market Yard Shimla & Kinnaur/Tapri	185
9	Sub Market Yard Sirmaur/Ghandoori	74
10	Sub Market Yard Sirmaur/Khairi	107
11	Sub Market Yard Solan/Solan	351
12	Sub Market Yard Solan/Vaknaghat	162
13	Sub Market Yard Solan/Kunihar	136
Total		1725

The upgrading of infrastructure facilities within APMCs not only modernizes these essential centers but also plays a pivotal role in enhancing the efficiency and profitability of agricultural trading.



Sub Market Yard Kunihar, APMC Solan



Sub Market Yard, Ghanduri, APMC Sirmaur



Sub Market Yard Takoli



Sub Market Yard Chaurbihal (Manali)



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



Himachal Pradesh Agriculture Development Society



Sub Market Yard Jassur



Sub Market Yard Khairi



Sub Market Yard Tapri



Sub Market Yard Passu



Sub Market Yard Solan



Sub Market Yard Wagnaghat



Sub Market Yard Bhattakuffar



Sub Market Yard Patlikuhal



Sub Market Yard Khegsu



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



4. Institutional Development Component: Under the Institutional Development Component of the project, various activities have been proposed. These activities mainly aim to enhance the capacity of PMU staff through trainings at premier institutes as well as study/exposure visits to the sites having successful introduction of technological innovations in the relevant field within & outside the state.

- **Capacity Development of Project Staff on PDCA Cycle:** To enhance the capabilities of the PMU staff for implementation of project activities, 4No training/workshops focused on Capacity Development particularly application of PDCA cycle in project implementation were conducted at the Himachal Institute of Public Administration in Shimla. These workshops aimed to foster a shared understanding among the PMU staff about the correlation and purpose of each project activity.
- Capacity development program targeting extension officers of the PMUs was carried out at SAU, specifically focusing on farm economy management.
- Two orientation workshops were conducted at the State Project Management Unit, aimed at aligning all stakeholders with the project's objectives and processes.



Capacity Development of Project Staff on PDCA Cycle



Capacity Development of Project Staff on PDCA Cycle

- **Procurement of ICT related equipment:** The equipments have been procured for the establishment of an MIS and ICT system in the PMU, amounting to 12.56 lakhs in the financial year 2022-23. The MIS/ GIS cell of SPMU, undertook several key activities, including:
 - Drafting a scope of work for the development of an integrated MIS-GIS application, outlining the selection process for a services provider agency.
 - Designing formats using platforms such as Google Forms to efficiently collect primary data related to project activities.
 - Developing standardized formats for the regular updating of financial reports and the Annual Plan of Operation (APO).
- **Construction of Training Centers:** Construction of two no. training centers at Solan and Hamirpur is under progress. Rs. 1.48 crores has been utilized during the financial year 2022-23 for this activity. The primary objective of these training centers is to facilitate training, meetings, seminars, workshops, and peer learning for the beneficiaries of the PMU's and other extension activities.





Farmer Training Centre site at Bangana



Beam reinforcement at FTC Solan.

- Overseas Training, Exposure/Study visits seminar Project Staff:** Two international exposure visits cum training programs were conducted during the Financial Year 2022-23 for officers from the Project Management Unit (PMU) and the Department of Agriculture (DoA) with a total expenditure of Rs. 81.79 lakhs. The focus of these exposure visits was Agriculture Marketing and Value Chain. These visits will promote understanding of advanced techniques in vegetable cultivation, agricultural product marketing channels, insights into the latest irrigation management practices, operation and maintenance (O & M) of assets created through participatory approaches and post-harvest management including processing and value addition of agricultural produce. The first batch comprising of 5 officers attended the exposure visit from 26th November to 7th December, 2022. The study visit of second batch comprising of 5 participants took place from 4th December to 12th December, 2022. The detail report of visits and its learning submitted to Govt. HP/ JICA India and shared with the PMU's.



Visit to the JA ZenNoH, National Federation of Agricultural Cooperative Associations, Tokyo



Ota Market, located in the Tokyo Bay area



Katori Farm, Japan



Izu Fruit Farm, Japan



Himachal Pradesh Agriculture Development Society



Visit to the Ashikaga University



Visit to Mistsui Outlet, Kitahiroshima



Crab Market in Sapporo



Agriculture Promotion Section, Furano



Visit to JICA Tokyo at Nibancho Center Building Tokyo, Japan



Visit to Ashikaga Institute of Technology (OMAE Campus) in Ashikaga, Japan



Visit to the Izu Fruit Farm, 181-1 Tsukahara Shinden, Mishima, Shizuoka 411-0016, Japan



Visit to the Hasegawa's Mushroom Farm, Japan



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



Himachal Pradesh Agriculture Development Society

• Meetings of Executive Committee:

3rd Executive Committee meeting was held on 9th June, 2022 under the Chairmanship of Sh. Rakesh Kanwar, Secretary (Agriculture) to the Govt. of Himachal Pradesh at HP Secretariat, Shimla. In this meeting the status of preparedness as well as pace of ongoing activities was discussed.

- The EC ratified the approval accorded by the Chairman EC to give financial assistance of Rs. 3 Crore from Society funds to the Animal Husbandry Department to set up new cow sanctuary at Beetan, Distt. Una.
- The proposal for payment of minimum wages to the outsourced employees and working in HPCDP as per H.P. Minimum Wages Act 1948 was also approved by EC.
- The Chairman directed the Project Director to consult the CA/experts regarding payment of employer's share of EPF/ESIC to the outsourced staff of HPCDP with MD HPSAMB and EPFO and other agencies who have hired similar outsourced staff and to bring the matter to discussion in the next EC meeting.
- Annual Report of Himachal Pradesh Agriculture Development Society for the year 2020-21 was also approved by EC.
- Proposal for substitution of 140 sub projects sites has also been approved by the EC.
- The contract negotiation report with the highest ranked bidder i.e. AECOM India Pvt. Ltd has been submitted to JICA India on dated 26.05.2023 for their concurrence and the chairman EC requested JICA India representative to accord their report at the earliest so that PMC is in mid July, 2022 to start review of DPRs and tendering process for construction activities could be started and expenditure could be incurred as per the APO.
- The Chairman EC pointed out the difference between formation and registration of KVAs. He further directed that all the concerned DPMs/BPMs should personally visit the Registrar/SDM offices to attend to the queries and issues if there is a problem the same may brought his notice with facts.



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



Photographs of JICA Mission



Farmers Support Activities under HPCDP JICA ODA Phase-II



Awareness Camp Involving Community at LIS Gharrat under BPMU Hamirpur



Workshop of Group to Develop Objectives and Norms at FIS Dhooni Kuhal under BPMU Palampur





Awareness camp at KVK Bajaura Distt. Kullu under BPMU Kullu



Awareness Camp Involving Community at FIS Jaladi Jasoh under BPMU Chamba



Awareness Camp Involving Community at FIS Anuhal under BPMU Palampur



Awareness Camp Involving Community at FIS Kansa Khad-Plahota under BPMU Mandi



Awareness Camp Involving Community at FIS Dhooni Kuhal under BPMU Palampur



Workshop of Group to Develop Objectives and Norms at TWIS Ispur (Pathak Mohalla) under BPMU Una



Baseline surveys conducted at various subprojects under HPCDP JICA ODA-Phase-II



Baseline survey at FIS Chamruhal kuhl under BPMU Palampur



Baseline survey at FIS Dhooni kuhl under BPMU Palampur



Baseline survey at FIS Malti Kuhl under BPMU Kangra



Baseline survey at FIS Giri to Khadar under BPMU Nahan



Baseline survey at FIS Khaldar under BPMU Solan



Baseline survey at FIS Dhooni kuhl under BPMU Palampur



Baseline survey at FIS Chharehra under BPMU Kullu



Baseline survey at FIS Osal Jamura under BPMU Chamba



Survey, Investigation and Design works under HPCDP JICA ODA Phase-II



Visit regarding Planning and Preparation of DPR at FIS Jaral Khad to Samrahan under BPMU Mandi



Visit regarding Planning and Preparation of DPR at FIS Bahdu Ropa under BPMU Palampur



Survey Work along with Egis Team at FIS- Moorang Nallah to Karba BPMU Rampur



Survey Work along with Egis Team at FIS- Thuwaring Kwalo to Lanen under BPMU Rampur



Visit regarding Planning and Preparation of DPR at LIS Kharwar under BPMU Hamirpur



Survey Work along with Egis Team at FIS Surul Kuhal under BPMU Chamba



Visit regarding Planning and Preparation of DPR at FIS Banjwar Baroti under BPMU Chamba



Visit regarding Planning and Preparation of DPR at FIS Chandpur under BPMU Solan



HIMACHAL PRADESH AGRICULTURE DEVELOPMENT SOCIETY



H.P. CROP DIVERSIFICATION PROMOTION PROJECT

Society HQ : Hamirpur - 177001, H.P.
PBX (Tele-fax) +91-01972-223059
Emails: pdcdp-hp@nic.in & pmucdp-hp@nic.in
www.hpcdp.nic.in

HIMACHAL PRADESH AGRICULTURE DEVELOPMENT SOCIETY

ANNUAL REPORT 2023-24



H.P. Crop
Diversification
Promotion Project
JICA-ODA



ALWAYS COMMITTED TO THE PROSPERITY OF FARMERS



H.P. CROP DIVERSIFICATION PROMOTION PROJECT



SOCIETY HQ: HAMIRPUR – 177001, H.P.

PBX (Tele-fax) +91-01972-223059

Emails: pcdp-hp@nic.in, pmucdp-hp@nic.in

ACKNOWLEDGEMENT

The H.P. Crop Diversification Project (HPCDP) has now embarked on its 4th year with the objective of benefiting 25,000 farming families across Himachal Pradesh through various project interventions. The Annual Report 2023-24, presents a comprehensive overview of the project's achievements and milestones, highlighting initiatives to enhance crop diversification and implement innovative agricultural practices, the report showcases the collective efforts of all stakeholders in driving meaningful changes. Through capacity-building programs, infrastructural development and technology adoption, the project has made significant strides in empowering farmers and strengthening the agricultural value chain.

I take this opportunity at first to extend my whole-hearted gratitude to the authorities from the Government of Himachal Pradesh (GoHP) and Government of India (GoI), our guides and torch bearers, and my colleagues to present this document to the apex bodies viz., the Governing Council and the Executive Committee, of the Himachal Pradesh Agriculture Development Society (HPADS).

On behalf of the project staff, I extend our gratitude to the Hon'ble Agriculture Minister, GoHP, whose leadership as the Chairman of the Governing Council has provided us with the inspiration, direction and support, necessary for steering the project deliverables for the welfare of farmers and the farming community. I also extend my gratitude to Ms. Maria Kato, Representative from JICA India, for her invaluable suggestions, guidance and support, which have motivated us to refine our strategies in project planning and execution vis-à-vis obtain additional technical and financial assistances for the state.

I also extend my thanks to Ms. Yasuko Nakajima, Gender Expert, JICA-Sri Lanka along with Ms. Nishtha Vengurlekar, Development Specialist, JICA-India, for their interactions with the SHGs/FPOs, encouraging the Self-Help Groups for their excellent work. I am also grateful to Mr. Taki, representative of Japanese Trading Company "Matsuda Sangyo Trading India Private Limited," for his keen interest in extending suitable support for the agri-business strengthening in the state.

I am extremely thankful to Ms. Asha Sota, Director, NRM/ RFS Division, Ministry of Agriculture & Farmers Welfare, GoI and Mr. Ram Adhin Singh Patel, Deputy Commissioner, RFS, Ministry of Agriculture & Farmers Welfare, GoI for their prompt support and guidance from time to time for implementation of the project. It gives me great pleasure to welcome Dr. C. Paulrasu, IAS as Secretary (Agriculture) cum Chairman Executive Committee, HPADS, GoHP and Ms. Nishtha Vengurlekar as Development Specialist, JICA-India cum incharge for the HPCDP (Phase-II). I extend my heartfelt gratitude to Mr. Rakesh Kanwar, IAS outgoing Secretary (Agriculture) cum Chairman Executive Committee, HPADS, GoHP for his unwavering support and guidance. I am thankful to the Chairperson of the Executive Committee vis-à-vis all the esteemed members for their useful suggestions and generous thoughts and readiness to accept the proposals put forth before them from time to time for the smooth and speedy execution of the programmes of the project.

I would also like to thank the Department of Agriculture for their support to provide the necessary staff from the organization to the project. I am also thankful to the team of consultants and service providers for their technical support for the project.

I also extend my thanks to all the colleagues at headquarters, field offices and all others who have helped us in preparing this report directly and indirectly.

Dr. Sunil Chauhan
Project Director



Contents

1	INTRODUCTION	1
2	ABOUT THE SOCIETY	2
	Main Objectives	2
	Powers & Functions of the Governing Council	2-3
	Powers & Functions of the Executive Committee	3-4
3	ABOUT JICA	5
4	ABOUT THE PROJECT (PHASE-II)	6
	Management Units of the Project	6
	State Project Management Unit (SPMU)	6-7
	District Project Management Unit (DPMU)	8
	Block Project Management Unit (BPMU)	8
	Brief Background of HPCDP	9
	Project Description	9
	Features of Phase-II Project	9
5	PROJECT COST	10
6	PROJECT COMPONENTS	10
7	QUALITATIVE AND QUANTITATIVE INDICATORS OF THE PROJECT	11
8	YEARLY UPTO DATE PHYSICAL AND FINANCIAL REPORT	11-20
9	MAJOR ACHIEVEMENTS/ PROJECT PROGRESS	21
9.1	Infrastructure Development Component	21-24
9.2	Farmers Support Component	25-43
9.3	Value Chain & Market Development	43-46
9.4	Institutional Development Component	47-58
9.5	Procurement of Services	59-62
9.6	Executive Committee (EC) Meetings	62-64
9.7	Joint Visit by JICA-Sri Lanka & JICA-India	65
9.8	PoC- Proof of Concept	65-66
9.9	Technical Intern Training Programme (TITP)/ Specified Skilled Worker (SSW)	67
9.10	Meeting Highlights & Achievements, 2023-2024	67-72
9.11	Appointment of Mr. Rajeshwar Thakur as Media Advisor	73
9.12	Appointment of Mr. Baljeet Sandhu as Senior Consultant	73
9.13	Audit Reports	73-75
9.14	Media Coverage of Project Activities	76-80

1. INTRODUCTION

Agriculture in Himachal Pradesh

Himachal Pradesh is a hilly state located at the foot of the Western Himalayas, with an area of 5.57 million hectares and a population of over 7 million approximately.

About 70 percent of working population in the state is engaged in agriculture, but the share of agriculture in the gross state domestic product is only 10.4 percent. Low agricultural productivity is partly attributable to the fact that due to the hilly and difficult terrain, the area available for growing crops is limited to 10 percent of the state's total land, thus more than 87 percent of farmers are marginal and small landholders, with an average landholding size of <1.00 hectare. Also, only 20 percent of the cultivable area has irrigation facilities, while the rest has to depend on rain.

Thus, most of the farmers in the state are engaged in traditional cultivation of the food grains, not being able to diversify to more profitable commodities, such as vegetables and high value crops.

In order to boost the agriculture development and enhance the farm income in the rural areas, it is, therefore, important to increase the productivity of the existing cultivated area, through shifting from self-subsistence crop cultivation to diversified agriculture, by adopting cash crops such as vegetables etc. suitable for the areas. As such overcoming the major constraints of limited irrigation facilities, farm access roads and insufficient marketing facilities, is highly essential.

H.P. Land Use At A Glance

	Area (Ha)
Total Geographical Area	55, 67, 300
Forests	11, 05, 997
Barren & Un-cultivated lands	7, 83, 404
Land put to non-agricultural use	3, 48, 649
Permanent pastures	15, 03, 833
Cultivable waste lands	1, 28, 224
Other fallow lands	22, 109
Current fallows	59, 991
Net Area Sown	5, 38, 412
Area sown more than once	4, 02, 185
Average annual rainfall	1075 mm
Gross irrigated area	1, 91, 000
Net irrigated area	1, 09, 940
Total Cropped Area	9, 40, 597



2. ABOUT THE SOCIETY

Himachal Pradesh Agriculture Development Society (HPADS) was established as an autonomous organization outside the Department of Agriculture, H.P., on Feb.7th, 2011 under HP Society Registration Act, 2006 for smooth & effective implementation of the JICA assisted project.

The society consists of the following bodies: -

- Governing Council (The General House)
- Executive Committee
- Project Management Units

The Governing Council in its first meeting held on January 6th 2011, approved the memorandum of association, Rules & Regulations of HPAD Society and subsequently, its registration under the Act, the instrument of society came into force.

Main objectives

- The society is an independent and autonomous body with the main aim to enhance farmer's income through sustainable and diversified farming system in Himachal Pradesh.
- To implement the project "Himachal Pradesh Crop Diversification Promotion Project" in Himachal Pradesh with due diligence and efficiency and in conformity with appropriate powers and with due regard to social and environment guidelines, acceptable to stakeholders and the Govt. of Himachal Pradesh in accordance with the MOU signed between the funding agency, GoI and GoHP.

After successful implementation and completion of Phase-I of HPCDP Project, Govt. H.P. of H.P., the Governing Body and Executive Committee of Himachal Pradesh Agriculture Development Society (HPADS) was re-notified for the implementation of Phase-II "Crop Diversification Promotion Project", JICA-ODA on 5th March, 2021.

Powers & Functions of the Governing Council

The Governing Council have the following powers and functions:

1. Observe the provisions of the memorandum of Association rules and such instruction of Govt. of H.P. in department dealing with the affairs of the Himachal Pradesh Agriculture Development Society, as may be issued, from time to time.
2. Exercise general control and issue such directions for the efficient management and administration of the affairs of the HPADS, as may be necessary.
3. Nominate members of the Executive Committee in accordance with rules.
4. Approve the annual budget of the HPADS, drawn up by the Executive Council and approve the budget for submission to the Govt. of H.P., for sanction of grants.
5. Consider the annual report approved by the Executive Committee.
6. Consider the balance sheet and audited accounts.
7. Add and amend, with prior approval of the Govt. of H.P., rules of the HPADS

8. Form bye-laws, not inconsistent with these rules and the memorandum of association for the management, administration & regulation of the business of the HPADS for the furtherance of its objectives.
9. To constitute committees, with or without powers to control, namely:
 - I. Executive Committee.
 - II. Any other committee deemed necessary.
10. To perform such other functions as are entrusted to it, under these rules.
11. The Governing Body may by resolution delegate the powers to its Chairman or of any Standing Committee or the Project Director, State PMU or to any other officer of the HPADS, such of its powers for the conduct of business, as it may deem fit.



Professor Chander Kumar Choudhary

Hon'ble Agriculture Minister cum Chairman of Governing Council
to the HP Agriculture Development Society, GoHP

Powers & Functions of the Executive Committee

The Executive Committee shall have the following powers and functions:

1. It shall be the responsibility of the Executive Committee to endeavour to achieve the objective of the Society and to discharge all its functions. The Executive Committee shall exercise all administrative and financial powers including powers to create posts of all descriptions and make appointments, thereon, in accordance with regulations.
2. The Executive Committee shall have under its control the management of all the affairs and funds of the Society.
3. The Executive Committee shall have the powers and responsibilities in respect of the following:
 - I. To frame, regulation with the approval of the State Government.
 - II. To frame amend or repeal any bye-laws for the conduct of activities of the Society, infurthering its objectives with the approval of the Governing Council.
4. The Executive Committee shall have the powers to enter into agreement(s) with other public or private organizations or individuals for furtherance of the objectives of the society.

5. The Executive Committee shall have the powers for securing and accepting endowments, grants-in-aid, donation, or gifts to the Society on mutually agreed terms and conditions, of which shall not be inconsistent or in conflict with the objectives of the Society or with provisions of these rules.
6. The Executive Committee shall have the powers to take over and/ or acquire in the name of the Society by purchase, gift or otherwise from Government and other public bodies or private individuals, any movable and immovable properties in the State or elsewhere or other funds together, with any attendant obligation and engagement, not inconsistent with the objectives of the Society and the provisions of these rules.
7. The Executive Committee shall take all steps to establish Project Management Unit or any other institution at State Level, District Level and Block Level required for the successful implementation of the project.
8. The Executive Committee shall have the powers to sell or give on lease any movable or immovable property of the Society provided, however, that no asset of the Society created out of Govt. grants shall without the approval of the Government be disposed off, encumbered or utilized for purpose other than those for which the grant was sanctioned.
9. The Executive Committee shall also:
 - I. Consider and approve the Annual Plan of Operation of Project "Himachal Pradesh Crop Diversification Promotion Project".
 - II. Consider and approve the Annual budget of the project.
 - III. Sort out problems in the implementation of the project.
 - IV. To ensure coordination with the line Departments/ Agencies for the project activities.
 - V. To review the implementation of the activities under the project.
 - VI. Perform any other works assigned by the Government.
10. The Executive Committee may delegate to the Chairman, Project Director or any of its members and/or to a Committee/Group or any other officer of the Society/project such administrative and financial powers and impose such duties as it deems proper and also duties that are to be exercised or discharged in furtherance of the objectives of the society.



Dr. C. Paulrasu, IAS

Secretary (Agriculture) cum Chairman Executive Committee,
HP Agriculture Development Society, GoHP

3. ABOUT JICA

The Japan International Cooperation Agency (JICA) is a Governmental agency that delivers the bulk of Official Development Assistant (ODA) for the Government of Japan. It is chartered with assisting economic & social growth in developing countries and the promotion of international cooperation. JICA has its headquarters in Tokyo, Japan.



Established on October 1st, 2003, under an Act (Act No. 136, 2002) of the Incorporated Administration Agency – JICA aims to contribute to the promotion of international cooperation as well as the sound development of Japanese and global economy by supporting the socio-economic development, recovery or economic stability of developing regions. JICA's version is "Inclusive & Dynamic Development".

JICA has four missions, which include

- Addressing the global agenda,
- Reducing poverty through equitable growth,
- Improving governance, &
- Achieving human security.

JICA has following four strategies

- Integrated assistance
- Seamless assistance
- Promoting development partnerships
- Enhancing research & knowledge sharing

Presently JICA-INDIA is being headed by Mr. SAITO Mitsunori, as the Chief Representative, effective on August 24th, 2021; who took over from Mr. KATSUO Matsumoto.

[\(https://www.jica.go.jp/india/english/\)](https://www.jica.go.jp/india/english/)

4. ABOUT THE PROJECT (PHASE-II)

Keeping in view the achievements of Phase-I, it was envisaged to prepare and propose Phase-II of HPCDP. Subsequently, the DPR was prepared in Oct., 2018 and submitted to GoI for approval. JICA conducted preparatory survey between July-Dec, 2020 through online mode with the help of DoA & HPCDP Phase-I Team. The appraisal of the project was done by JICA mission in Dec., 2021. The Minutes of Discussion (MoD) were signed in February, 2021 between GoHP, GoI and JICA. The loan agreement was signed in March, 2021. To implement Phase-II of Project in the entire state, State Project Management Unit (SPMU), 4 District Management Units (DPMU) and 14 Block Project Management Units (BPMU) have been established under the HPADS.

It was decided that the main implementing and coordinating agency for project remains "Himachal Pradesh Agriculture Development Society", constituted under Phase-I. In the nine years of project implementation, HPCDP Phase-II will incur funds amounting to ₹1010.60 crore in twelve districts of Himachal Pradesh through State Project Management Unit with its headquarter at Hamirpur, for the purpose of sustainable crop diversification by development of minor irrigation facilities and farm access roads as well as improvement of extension service function including vegetable cultivation and value chain & marketing. The expenditure against the project components will be incurred at the state, district and block levels in all the 12 districts viz; Hamirpur, Bilaspur, Kangra, Mandi, Una, Solan, Kullu, Shimla, Kinnaur, Chamba, Sirmour and Lahaul & Spiti.

Management Units of the Project

H.P. Crop Diversification Promotion Project, Phase-II is covering all the 12 districts of Himachal Pradesh. The project focuses on 306 sub-projects, where irrigation infrastructure being created and various farmers support activities being undertaken.

The project consists of the following units :-

State Project Management Unit (SPMU): -

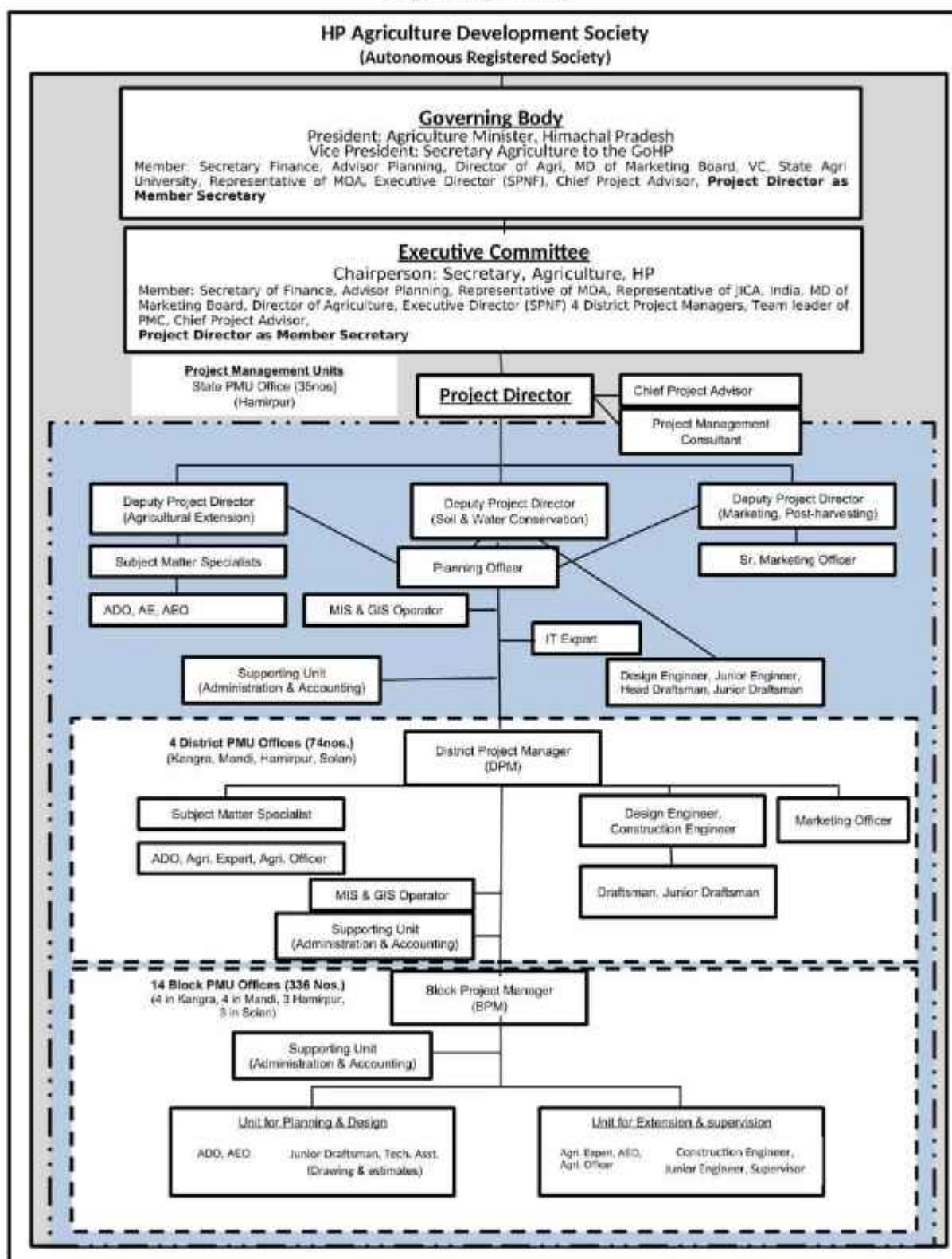
Number of Units	: One
Location	: Agriculture Complex, District Hamirpur
Tele-Fax	: 01972-223059
E-mail address	: pcdp-hp@nic.in & pmucdp-hp@nic.in
Website	: hpmdp.nic.in

Functions of the State PMU: -

The State PMU is entrusted with the overall managerial charge of implementation of the project. State PMU lead the overall project planning, project coordination including that with JICA overall procurement management, financial management including collating the expenditure statements from District level PMUs and Block level PMUs and consolidate these for submitting the reimbursement claims to JICA, monitoring and evaluation, and preparation of reports such as Quarterly Progress Reports and Project Completion Report etc.

Organogram of the HPADS for HPCDP (Phase-II), JICA-ODA

Organization Chart



As per decision of the 4th Executive Committee, number of Block PMU office have been increased 14 to 15 numbers.

District Project Management Unit (DPMU)

Four district PMUs established in the District of Kangra (Palampur), Mandi, Hamirpur & Solan

i. District Project Management Unit, Hamirpur (covers Districts Hamirpur, Bilaspur & Una)

Location: District Project Management Unit, HPCDP (Phase-II), JICA-ODA, Hamirpur, Agriculture Complex, District Hamirpur – 177001 H.P.

E-mail address: dpmcdp-ham-hp@nic.in

ii. District Project Management Unit, Palampur at Kangra (covers Districts Kangra & Chamba)

Location: District Project Management Unit, HPCDP (Phase-II), JICA-ODA, Palampur

Top Floor, Bio Control Laboratory, Palampur, District Kangra -176062 H.P.

E-mail address: dpmcdp-kan-hp@nic.in

iii. District Project Management Unit, Mandi (covers Districts Mandi, Kullu, Lahul & Spiti)

Location: District Project Management Unit, HPCDP (Phase-II), JICA-ODA, Mandi, Agriculture Complex, Jawahar Nagar, Mandi -175001 H.P.

E-mail address: dpmcdp-man-hp@nic.in

iv. District Project Management Unit, Solan (covers Districts Solan, Shimla, Sirmour & Kinnour)

Location: District Project Management Unit, HPCDP (Phase-II), JICA-ODA, Solan, Bergaon, P.O. Chambaghat Tehsil & District Solan H.P. 173213

E-mail address: dpmcdp-sol-hp@nic.in

Functions of DPMU

The main functions of District PMUs are to conduct district level monitoring and supervision by PDCA (Plan-Do-Check-Action) cycle management as well as utilizing the MIS and GIS systems and undertake quality control measure of work to be done by Block PMUs. They shall also review, the detailed project design and other reports to be submitted to State PMU for final approval.

Block Project Management Unit (BPMU): -

Number of Units: 15

Locations:

Four under DPMU Kangra viz., Palampur, Kangra, Dharamshala, Chamba & Jawali

Four under DPMU Mandi viz., Mandi, Kullu, Gohar & Sarkaghat

Three under DPMU Hamirpur viz., Hamirpur, Bilaspur & Una

Three under DPMU Solan viz., Solan, Nahan & Rampur

Functions of BPMU

Block PMU has following major functions:

- Community organization and their capacity building.
- Sub project level planning for project outputs in the shape of DPRs, Sub-project Development Plans, including Crop Diversification Plan & Livelihood Development Plans.
- Supervision, quality and progress control of infrastructure development at sub-project sites.
- Leading the communities/ beneficiary farmers towards project outputs by relevant support through various project interventions.

Brief Background of HPCDP

DoA prepared and submitted detailed project report (DPR) through H.P. Agri. Development Society to GoI:	October, 2018
MoD signed	February, 2021
Discussion with Contact Mission, Fact Finding Mission, Appraisal Mission and Loan Agreement Signed (ID-P290)	26 th March, 2021
Loan Effectuation	21 st July, 2021
Loan disbursement closing date	12 years after loan effectuation
Launching of Phase-II Project	16 th November, 2021

Project Description:

Project Name	Himachal Pradesh Crop Diversification Promotion Project (Phase-II)
Project Area	All 12 Districts of Himachal Pradesh
Project Duration	9 Years, (2021-2029)
Objective	Promoting sustainable crop diversification, increasing agricultural productivity and improving farm incomes.
Project Scope	To establish crop diversification model in 7 new districts, and expand the model to 5 Phase-I districts.

Features of Phase-II Project:

1. To promote crop diversification through development of necessary infrastructure in the agriculture sector. Construction of infrastructure facilities like minor irrigation, farm road, solar pumping, solar/ electric fencing etc.
2. Training, capacity building of farmers/ extension workers.
3. Implementation of the project through public participation system by Krishak Vikas Associations (KVAs), Self Help Groups, Farmer Groups & Focused Groups.
4. Enhancing opportunities for improving livelihoods through dairy, beekeeping, backyard poultry, service sector, mushroom, shiitake mushroom cultivation and farm fish culture.
5. Promotion of innovative activities like nutritional reforms, etc.
6. Ensuring a strong demand driven marketing system and setting up of 10 FPOs.
7. Capacity building of the community to take over the operation & maintenance of created Infrastructure.
8. Institutional development by strengthening agriculture department, strengthening extension service work and baseline survey, impact assessment, etc.

5. PROJECT COST

Particulars	(₹ in Crore)	(Mill. Yen)
Total Project cost	1010.60	14148
JICA Portion (Loan)	807.30	11302
State Share	203.30	2846

6. Project Component

Name of component	Activities	Layout (₹ in Crore)
Infrastructure Development	Development of Minor Irrigation (FIS 191, LIS 94, TWIS 11, Convergence with existing I & PH schemes 10, Total 306), Micro Irrigation Systems, Catchment Area Treatment, Solar Pumping Systems, Farm Access Roads, Solar, Electric, Barbed and Chain Link Fencing, Infrastructure Development Support, Surveying, Testing and Designing.	330.72
Farmer Support Component	KVA capacity building, training on vegetables, food crops and value addition, agricultural machinery, development of 3 model seed farms, 11 research projects, small poly/net houses, tunnels, soilless farming, soil testing kits, plastic mulches and anti-hail nets, Support for livelihood through Poultry, Dairy, Fisheries, Mushroom, Shiitake Mushroom, Bee keeping, Service Sector Entrepreneurs, nutrition improvement (kitchen garden etc.) shall be undertaken.	108.50
Value Chain and Market Development	Formation of 10 FPOs, modernization of facilities in APMC	63.30
Institutional Development	Baseline Survey, Medium Term and Terminal Evaluation, Gender Mainstreaming	157.50
Price Escalation		56.90
Physical Contingency		35.80
Consulting Services @ 0.15 % & 1 INR = 1.40 JPY		54.60
Total JICA ODA Loan @ 1.15 % and 1INR = 1.40 JPY		807.30
State's share (Non-Eligible) 20%		203.30

7. QUALITATIVE AND QUANTITATIVE INDICATORS OF THE PROJECT

Item	Unit	Current Status	Post Project Status
Irrigation Beneficiary Area	Ha.	1745.26	7933
Micro Irrigation	Ha.	-	560
Miscellaneous area under vegetables in (both seasons)	Ha.	576.72 3100	6944 9000
Vegetable cultivating farmer	No.	-	
Increase in yield	M/T/Ha.		
Vegetables	M/T/Ha.	10.17	24.00
Cereal		2.00	2.83
Gross Annual Agricultural Income	□/Ha.	62,605	2,50,000
Formation of FPOs	No.	-	10
Solar pumping unit	No.	-	83
Number of SHG established	No.	-	100

8. YEARLY UPTO DATE PHYSICAL AND FINANCIAL REPORT

8.1 Annual Physical & Financial Progress of External Aided Project for the Financial Year 2021-22 (Rs. In Lakh)

S.N.	Item	Unit	Targets		Achievements	
			Physical	Financial	Physical	Financial
1.	Infrastructure Development for sub-projects					
1.3.2	Survey, Investigation, Design & Estimation (Preparation of DPR)	No.	60	106.98	60	106.98
	Total of A			106.98		106.98
2.	Farmers' Support Component					
2.1	Formation and Strengthening KVA					
2.1.1	Awareness Camp involving Community	No.	62	4.98	62	4.98
2.3	Research and Seed Production					
2.3.1	R & D support (11 Sub projects)	No.	Under execution	90.15	Under execution	90.15
2.3.2	Infrastructure development at SAU for vegetable seed production	No.	Under execution	248.30	Under execution	248.30
2.5.7	Promotion of Shiitake Mushroom Cultivation (Management Cost for SCTC)	No.	Under execution	5.77	Under execution	5.77
	Total of B			349.20		349.20

3.	Value Chain and Market Development Component					
3.4	Modernizing facilities and equipment in Mandis					
3.4.1	Facility construction with equipment					
3.4.2	O & M of facilities & equipment	No.	Under execution	540.00	Under execution	540.00
	Total of C			540.00		540.00
4.	Institutional Development Component					
4.1	Strengthening of DOA					
4.1.1	Recruitment of PMU Staff (Out-Source)	No.	1	313.97	1	313.97
4.1.2	Capacity Development of Project Staff on PDCA Cycle					
	(7) Organising periodical review meetings, workshops etc.	LS	-	2.06	-	2.06
4.1.4	Procurement of ICT related equipment					
	(1) Procurement of general use IT equipment	LS	-	98.67	-	98.67
	(4) Strengthening of GIS/MIS Cell (Existing)	LS	-	0.31	-	0.31
4.1.8	Construction of Training Centres	No.	Under execution	1.90	Under execution	1.90
4.1.9	Procurement of Equipment and Tools to PMU					
	(1) Rented accommodation for office space for 2 DPMU	LS	-	5.68	-	5.68
	(2) Rented accommodation for office space for 10 BPMU	LS	-	18.73	-	18.73
	(3) Furniture & office-equipments, (New PMUs)	LS	-	36.38	-	36.38
	(4) Replacement/ updation of Furniture	LS	-	1.00	-	1.00
	(5) Transport facilities at PMU Procurement of 3 vehicles (SPMU 3) and hiring of 24 No. MUV (SP MU 2, DPMU08, BPMU 14), 20 no Motor cycles, Scooties 20 No.	LS	-	69.81	-	69.81
	(6) Rental accommodation for extension officers (70 sites)	LS	-	1.16	-	1.16
	(7) Publicity events, public awareness materials, inaugural ceremonies of sub projects	LS	-	5.88	-	5.88

	(8) Hiring of support services	LS	-	8.10	-	8.10
	(11) Project Operational expenses	LS	-	6.00	-	6.00
	(12) Countermeasures for COVID-19	LS	-	1.90	-	1.90
4.2	Strengthening of Extension Service Function					
4.2.1	Preparation of Information, Education and Communication (IEC) Material for Dissemination					
	(2) Publication of handouts and manuals	LS	-	1.63	-	1.63
	(5) Preparation of video programmes	No.	-	2.37	-	2.37
	(7) Farmers' fair in each cluster	No.	-	13.38	-	13.38
4.3	Baseline Survey and Impact Assessment					
4.3.1	Conduct baseline survey	No.	1	10.90	1	10.90
	Total of D			599.82		599.82
	Total (A+B+C+D)			1596.00		1596.00
Non-Eligible portion						
Administrative Cost and GST				404.00		404.00
Grand Total of Eligible and non-eligible				2000.00		2000.00

8.2 Annual Physical & Financial Progress of External Aided Project for the Financial Year 2022-23 (Rs. In Lakh)

S.N.	Item	Unit	Targets		Achievements	
			Physical	Financial	Physical	Financial
1.	Infrastructure Development					
1.1.1	Minor Irrigation			1.29		1.29
1.3.2	Survey, Investigation, Design & Estimation (Preparation of DPR)	No.	120	174.28	120	174.28
Total (1)			120	175.57	120	175.57
2.	Farmers' Support Component					
2.1	Formation and Strengthening KVA					
2.1.1	Awareness Camp involving Community	No. of training	142	8.29	142	8.29
2.1.2	Formation and formalization of KVAs					
1	Workshop of group to develop objectives and norms	No. of training	114	3.72	114	3.72
2	Training to MC members on role and responsibility	No. of training	6	2.76	6	2.76
3	Exposure visit of MC members to KVA in other area of HP	No. of training	8	6.27	8	6.27
2.3	Research and Seed Production					

2.3.1	R & D support (11 Sub projects)- 2 nd year phasing	No.	1	193.35	Under progress (11)	93.35
2.3.2	Infrastructure development at SAU for vegetable seed production-2 nd year phasing	No.	1	197.80	Under progress (11)	197.80
2.4	Innovative activities					
2.4.1	Establishment of centre of excellence for vegetable nursery production (SAU)- 1 st year phasing	No.	1	15.50	Under progress (11)	15.50
2.4.2	Trial for soil less cultivation/Fan Pad GH with vertical system- 1 st year phasing	No.	-	21.48	-	21.48
2.5.2	Mushroom cultivation on cost sharing basis 80:20	No.	-	1.42	-	1.42
2.5.7	Promotion of Shiitake Mushroom Cultivation (Management Cost for SCTC)	No.	1	12.00	1	12.00
Total (2)				362.59		362.59
3.	Value Chain and Market Development Component					
3.4	Modernizing facilities and equipment in Mandis	No.	Under progress (13)	1350.00	Under progress (13)	1350.00
Total (3)				1350.00		1350.00
4.	Institutional Development Component					
4.1	Strengthening of DOA					
4.1.1	Recruitment of PMU Staff (Out- Source)	No.	1	570.07		1570.07
4.1.2	Capacity Development of Project Staff on PDCA Cycle					
1	Orientation Workshop of PMU Staff	No.	-	0.38	-	0.38
2	Training of District & Block Project Managers on PIM, PRA and CDP	No.	-	0.45	-	0.45
3	Conceptual Training for PMU Staff on PDCA Cycle	No.	-	0.07	-	0.07
4	Workshops to establish PDCA cycle	No.	0	0.00	0	0.00
5	Exposure Visits of PMU Staff (Other States)	No.	1	2.40	1	2.40

6	Peer Learning Workshop	No.	1	0.19	1	0.19
7	Organising periodical review meetings, workshops etc.	LS	-	4.99	-	4.99
8	HRD training on Team building, leadership, Motivation / inspiration and Stress management.	No.	4	5.85	4	5.85
9	Agriculture Extension Training	No.	1	0.55	1	0.55
10	Engineering Training	No.	1	1.97	1	1.97
4.1.7 Procurement of ICT related equipment						
1	Procurement of general use IT equipment	LS	-	15.06	-	15.06
7	Hiring of Services for Development of software application	LS	-	0.11	-	0.11
4.1.8	Construction of Training Centres	No.	2	167.08	Under progress (2)	167.08
4.1.9 Procurement of Equipment and Tools to PMU						
1	Rented accommodation for office space for DPMU	LS	-	7.50	-	7.50
2	Rented accommodation for office space for 10 BPMU	LS	-	18.20	-	18.20
3	Furniture & office-equipments, (New PMUs)	LS	-	21.17	-	21.17
4	Replacement/ updation of Furniture	LS	-	1.24	-	1.24
5	Transport facilities at PMU Procurement of 3 vehicles (SPMU 3) and hiring of 24 No. MUV (SPMU 2, DPMU08, BPMU 14), 20 no Motor cycles, Scooties 20 No	LS	-	108.86	-	108.86
6	Rental accommodation for extension officers (70 sites)	LS	-	3.27	-	3.27
7	Publicity events, public awareness materials, inaugural ceremonies of sub projects	LS	-	2.17	-	2.17
8	Hiring of support services	LS	-	9.54	-	9.54
11	Project Operational expenses	LS	-	18.01	-	18.01

12	Countermeasures for COVID-19	LS	-	0.60	-	0.60
4.2	Strengthening of Extension Service Function					
4.2.1	Preparation of Information, Education and Communication (IEC) Material for Dissemination					
1	Posters	LS	-	0.50	-	0.50
2	Wall writings & fixing of posters	LS	-	0.00	-	0.00
4	Publication of handouts and manuals	LS	-	3.03	-	3.03
5	Preparation of video programs	LS	-	0.00	-	0.00
7	Farmers' fair in each cluster	LS	-	2.30	-	2.30
4.2.3	Capacity Development of Engineering Staff					
1	Application of the Guideline and Check list	No.	1	0.53	1	0.53
2	Data preparation and record keeping of pre-condition of each sub-projects.	No.	1	0.53	1	0.53
4.2.5	International/national/state level workshop/seminars	No.		0.00		0.00
3	State level workshop/seminars	No.	-	1.46	-	1.46
4.2.6	Overseas Training, Exposure/ Study visits senior Project Staff	No.	2	81.79	2	81.79
	Total (4)			1049.89		1049.89
Category A Total (1+2+3+4)				2938.05		2938.05
Category B Consultancy services				361.95		361.95
Category C Physical contingency				0.00		0.00
Grand Total of Eligible Portion (Category A+B+C)				3300.00		3300.00
Non-Eligible						
Administrative cost				570.22		570.22
GST/Taxes/Front end fee/Import Tax and other taxes				129.78		129.78
Total of Non-Eligible Portion				700.00		700.00
Grand Total (Eligible +Non-Eligible)				4000.00		4000.00

8.3 Annual Physical & Financial Progress of External Aided Project for the Financial Year 2023-24 (Rs. In Lakh)

S.N.	Item	Unit	Achievements	
			Physical	Financial
1.	Infrastructure Development			
1.1.1	Minor Irrigation			1179.19
1.1.3	Catchment Area Treatment			
1	Wire Crates			6.26
2	Silt Retention Structures			0.00
1.1.5	Access farm road			
	Cement Concrete Road W= 2.0-4.0m	Km	0.91	38.32
1.3.2	Survey, Investigation, Design & Estimation (Preparation of DPR)	No.	104	142.53
	Total (1)			1366.30
2.	Farmers' Support Component			
2.1	Formation and Strengthening KVA			
2.1.1	Awareness Camp involving Community	No. of training	64	4.12
2.1.2	Formation and formalization of KVAs			
1	Workshop of group to develop objectives and norms	No. of training	122	3.61
2	Training to MC members on role and responsibility	No. of training	8	4.02
3	Exposure visit of MC members to KVA in other area of HP	No. of training	3	2.95
2.1.3	Capacity development of KVAs for O&M Management			
	(1) Workshop to discuss principal and practices of irrigation and water management	No. of training	151	4.98
	(2) Training on techniques of water management	No. of training	0	0.00
	(3) Field training on basic engineering skills	No. of training	37	2.27
2.2.2	Farm Economy Management, Training on farm management by farm type (advanced, intermediate and conservative)			
	(1) Orientation & Need Assessment	No. of training	165	4.79
	(2) Training on farm management and Bookkeeping	No. of training	170	4.94
	(3) Workshop of Farmers Group on cropping pattern arrangement	No. of training	2	0.80
2.2.3	Training cum method demonstration on Cultivation Practice of vegetable crops			
	(2) Sub-projects having CCA more than 25 hacts (187 nos +10 nos)	No. of training	3	0.09
2.2.4	Seed production and Demonstration (DOA)		-	36.81

2.2.5	Food Grain's Productivity Training & demonstration	No. of training	48	1.44
2.2.6	Provision of Farm Machinery		101	25.98
2.3	Research and Seed Production			
2.3.1	R & D support (11 Sub projects)	No.	2 completed and 9 Nos. under execution	53.52
2.3.2	Infrastructure development at SAU for vegetable seed production	No.	Under execution	17.51
2.4	Innovative activities			
2.4.1	Establishment of centre of excellence for vegetable nursery production(SAU)	No.	Under execution	8.93
2.5	Livelihood support activities for on /off farm activities and service sector activities			
2.5.1	Formation and formalization of SHGs			
	(1) Workshop of group to develop objectives and norms	No.	19	0.62
2.5.7	Promotion of Shiitake Mushroom Cultivation (Management Cost for SCTC)	No.	Under execution	16.29
	Total (2)			193.66
3.	Value Chain and Market Development Component			
3.4	Modernizing facilities and equipment in Mandis	No.	10 Nos. completed and 3 Nos. under execution	1121.54
	Total (3)			1121.54
4.	Institutional Development Component			
4.1	Strengthening of DOA			
4.1.1	Recruitment of PMU Staff (Out-Source)	No.	1	591.69
4.1.2	Capacity Development of Project Staff on PDCA Cycle			
1	Orientation Workshop of PMU Staff	No.	-	0.37
2	Training of District & Block Project Managers on PIM, PRA and CDP	No.	1	1.05
3	Conceptual Training for PMU Staff on PDCA Cycle	No.	0	0.00
4	Workshops to establish PDCA cycle	No.	0	0.00
5	Exposure Visits of PMU Staff (Other States)	No.	2	1.87
6	Peer Learning Workshop	No.	6	0.62
7	Organising periodical review meetings, workshops etc.	LS	-	2.43

8	HRD training on Team building, leadership, Motivation/inspiration and Stress management.	No.	2	0.94
9	Agriculture Extension Training	No.	-	2.33
10	Engineering Training	No.	-	0.51
4.1.7	Procurement of ICT related equipment			
1	Procurement of general use IT equipment	LS	-	53.70
4.1.8	Construction of Training Centres	No.	2	0.76
4.1.9	Procurement of Equipment and Tools to PMU			
1	Rented accommodation for office space for 2 DPMU	LS	-	3.60
2	Rented accommodation for office space for 10 BPMU	LS	-	6.24
3	Furniture & office-equipments, (New PMUs)	LS	-	2.53
4	Replacement/ updaton of Furniture	LS	-	1.08
5	Transport facilities at PMU Procurement of 3 vehicles (SPMU 3) and hiring of 24 No. MUV (SPMU 2, DPMU08, BPMU 14), 20 no Motor cycles, Scooties 20 No	LS	-	114.40
6	Rental accommodation for extension officers (70 sites)	LS	-	2.15
7	Publicity events, public awareness materials, inaugural ceremonies of sub projects	LS	-	1.70
8	Hiring of support services	LS	-	5.56
11	Project Operational expenses	LS	-	14.71
12	Countermeasures for COVID-19	LS	-	0.08
4.2	Strengthening of Extension Service Function			
4.2.1	Preparation of Information, Education and Communication (IEC) Material for Dissemination			
1	Posters	LS	-	0.16
2	Wall writings & fixing of posters	No.	41	0.84
3	Street plays on present situation and improvement	No.	27	1.62
4	Publication of handouts and manuals	LS	-	3.52
5	Preparation of video programs	LS	-	2.61
7	Farmers' fair in each cluster	LS	-	4.05
4.2.2	Capacity Development of Agriculture Extension Staff			
	(1) Farming practices on common and exotic vegetables with field exercises	No.	2	1.73
	(2) Protected cultivation with field exercises	No.	-	0.64

	(3) Integrated Pest Management	No.	2	1.02
	(4) Integrated Nutrition Management	No.	2	1.40
	(5) Soil analysis and soil health management	No.	2	1.43
	(6) Market-led extension	No.	0	0.00
4.2.3	Capacity Development of Engineering Staff			
1	Application of the Guideline and Check list	No.	-	0.61
2	Data preparation and record keeping of pre-condition of each sub-projects	No.	1	1.10
3	Design of Pumping machinery	No.	2	0.92
4.2.4	Strengthening of Research-Extension-Farmer Linkages and Joint Visits	No.		0.00
4.2.5	International/national/state level workshop/seminars	No.		0.00
3	State level workshop/seminars	No.	2	4.45
Total (4)				964.42
Category A Total (1+2+3+4)				3645.92
Category B Consultancy services				346.09
Category C Physical contingency				0.00
Grand Total of Eligible Portion (Category A+B+C)				3992.01
Non-Eligible				
Administrative cost				427.07
GST/Taxes/Front end fee/Import Tax and other taxes				340.15
Total of Non-Eligible Portion				767.22
Grand Total (Eligible +Non- Eligible)				4759.23

9. MAJOR ACHIEVEMENTS / PROJECT PROGRESS

9.1. Infrastructure Development Component:

- Survey, investigation, planning and design work for various sub-projects are currently underway. For the financial year 2023-2024, Detailed Project Reports (DPRs) have been prepared for 104 out of 296 sub-projects in collaboration with Krishak Vikas Associations (KVAs). By March 2024, a total of 260 DPRs have been completed, with the preparations ongoing for the remaining sub-projects.
- The Project Management Consultant (PMC) is reviewing the DPRs regularly and till now 152 no. DPRs have been recommended by PMC for initiating pre-construction activities. During the FY 2023-24, the PMC has reviewed and made recommendations for 115 DPRs. After approval from PMC, the works being put to E-tendering for award.
- During the FY 2023-24, the process of E-tendering started to select contractors for the construction of minor irrigation schemes across 108 sub-project sites.
- As of March 2024, tenders of 144 sub projects have been floated out of which 111 Nos. of works amounting to ₹57.96 crores have been awarded. Construction activities have commenced on 105 sub-projects during the reporting year.



Survey work at FIS Leo Kuhal under BPMU Rampur



Survey work at LIS Saikali under BPMU Bilaspur



Survey work at FIS Ghaddul under BPMU Palampur



Survey work at FIS Ropa Nalwari under BPMU Mandi



DPR finalization at FIS Kusmal Bagora under BPMU Palampur



DPR finalization at FIS Gumma under BPMU Mandi



DPR finalization at TWIS Kharota and Chabuan under BPMU Dharamshala



DPR finalization at LIS Bhagatpuri and Glyan under BPMU Bilaspur



Construction work at FIS Malti Kuhal under BPMU Dehra



Construction work at FIS Kansa Khad to Ganehar Ropa under BPMU Mandi



Construction work at FIS Kandluto Bithri under BPMU Gohar



Construction work at FIS Bhalja Nala to Washni under BPMU Nahan



Construction work at FIS Shokrori under BPMU Rampur



Construction work at LIS Dakohal under BPMU Hamirpur



Construction work at FIS Balehar Kuhal under BPMU Palampur



Construction work at FIS Kothi Batala-Jeora Inspection under BPMU Bilaspur

Additionally, DPRs for 17 Farm Access Roads (FARs) covering a length of 13.85 kms has been prepared and recommended by the PMC for pre-construction initiation. During the FY 2023-24, tenders for 9 FARs have been initiated with contracts awarded for 5 projects amounting to ₹2.00 crores. Site selection for the construction of the remaining farm access roads, catchment area treatment, solar fencing and installation of solar pumping units is currently in progress.



Construction work of FAR at FIS Padhar to Aarang under BPMU Mandi



Construction work of FAR at FIS-Katli Nallah to Nanwan Papehra at BPMU Mandi



Construction work of FAR at FIS Falatnallah under BPMU Kullu



Construction work of FAR at FIS Katli Nallah to Nanwan Papehra under BPMU Mandi



Construction work of Farm Access Road at TWIS Khawaja under BPMU Una



Note cam lite
Address : Una, Himachal Pradesh, India
Latitude : 31.502568°
Longitude : 76.324861333333°
Altitude : 374.9 meter
Date : 26/03/2023, 01 pm

9.2 Farmers Support Component:

Under Farmer Support Component, number of activities were planned in Annual Plan of Operation 2023-24, which includes Awareness Camp involving Community, Formation and Formalization of KVAs, Capacity Development of KVAs for O & M Management, Farm Economy Management, Training on Farm Management by Farm Type, R & D support, Infrastructure Development at SAU for Vegetable Seed Production, Establishment of Centre of Excellence for Vegetable Nursery Production, Trial for soil less cultivation/ Fan Pad GH with vertical system, Mushroom Cultivation on cost sharing basis 80:20 and promotion of Shiitake Mushroom.

9.2.1 Awareness Camp involving Community:

- The primary objectives of the training program were to enhance awareness among water user beneficiaries regarding project activities, crop diversification, project components, objectives, scope, operation and maintenance of irrigation facilities, water management and equitable water distribution.
- By the end of the FY 2023-24, a total of 64 awareness camps were organized across various sub-project sites.
- During these camps, 11,291 farmers were made aware by utilizing funds amounting to ₹4.12 lakh.



Awareness Camp at FIS Gramang Nalla to Rispa under BPMU Rampur



Awareness Camp at FIS Seobaag under BPMU Kullu



Awareness Camp at FIS Jarkat to Khadkai under BPMU Nahan



Awareness Camp at FIS Shaini under BPMU Chamba

9.2.2 Formation and Formalization of KVAs:

- Significant progress has been made in formalizing Krishak Vikas Associations (KVAs) across various Project Management Units (PMUs). An expenditure of ₹10.58 lakh has been incurred in the activity "Formation and Formalization of KVAs" during the FY 2023-24.
- During the reporting year, 122 no. of workshops were conducted to define KVA Objectives and Norms with active participation of 4787 farmers.
- Additionally, eight training sessions for MC members of KVA were held across all DPMUs incurring an expenditure of ₹4.02 lakh, involving 347 Management Committee (MC) members, focusing on clarifying their roles and responsibilities. In the training, the MC members were informed and apprised about different responsibilities of KVA members and likely issues they may face during the construction of irrigation facility and their role in monitoring the construction activity and quality control measures.
- Furthermore, three exposure visits of MC members were planned and executed incurring expenditure of ₹2.95 lakh during the reporting year.
- As result of these efforts, a total of 83 Krishak Vikas Associations (KVAs) has been established, with 86 of them got registered under the HP Society Act 2006 during the FY 2023-24.



Workshop of group to Develop Objectives and Norms of SHG at LIS Rohwin under BPMU Hamirpur



Workshop of group to develop objective & norms at FIS Jobrang under BPMU Kullu



Workshop of Group to Develop Objectives & Norms organized at FIS GramangKwalo to Makarmang Shilling Khopa under BPMU Rampur



Workshop on Objective and Norms of KVA at LIS Makri under BPMU Bilaspur



Training to MC members of KVA at DPMU Palampur



Training to MC members of KVA at DPMU Solan

9.2.3 Capacity development of KVAs for O & M Management:

- Under this project activity, several initiatives were undertaken during the FY 2023-24 to enhance knowledge and skills in irrigation and water management. The main objective of these efforts was to increase awareness among farmers about the importance of efficient water use in irrigation and educating farmers about the construction, operation and maintenance of irrigation systems to ensure their sustainable utilization. Emphasizing responsible water usage and efficient water distribution among farmers was also a key aspect of the awareness raising efforts.
- Throughout the reporting year, approximately ₹7.25 Lakh were utilized on these capacity-building activities across various Project Management Units (PMUs). Specifically, 151 no. of Workshops to discuss principal and practices of irrigation and water management have been conducted with active participation of 4523 no. of farmers. During the FY 2023-24, 37 no. training sessions on basic engineering skills were conducted to 1446 no. of farmers.



Workshop to discuss principal and practices of irrigation and water management at LIS Takipur under BPMU Kangra



Workshop to discuss principal and practices of irrigation and water management at FIS Bhija Nala to Wasni under BPMU Nahan



Training on Basic Engineering Skills at FIS Bhalja Nala to Washini under BPMU Nahan



Workshop on Basic Engineering Skills at FIS Nogi Khad under BPMU Gohar



Workshop on Principal and Practices of Irrigation and Water Management at FIS Dharer Kuhal under BPMU Palampur



Training on Basic Engineering Skills at FIS Ritta Urella under BPMU Chamba

9.2.4 Farm Economy Management, Training on farm management by farm type (advanced, intermediate and conservative)

- Expenditure worth ₹10.53Lakh has been utilized under "Farm Economy Management & Training on farm management" activity during the reporting year. The primary aim of the program is to tailor support according to farmers' skills and motivations, recognizing three distinct categories: conservative, intermediate and advanced farmers. Conservative farmers are basically not so positive for crop diversification as well as cultivation of commercial crops, they have less interests to improvement of their skills. Intermediate farmers are interested in get more production and more profit, but not so positive. Meanwhile, advanced farmers have high interests to better situation, and try to improve their skills and earn more profit.
- During the FY 2023-24, 165 no. of trainings have been organized for orientation and need assessment with active participation of 4931 no. of farmers. During the FY 2023-24, 170 no. of trainings on Farm Management and Book Keeping have been conducted and 5195 no. of farmers participated across the state.



Training on Farm management and Book keeping at FIS Naraini under BPMU Kullu



Training on farm management and book keeping at FIS Vaidan di Kuhal under BPMU Palampur



Training on Farm Management and Bookkeeping at FIS Shaini under BPMU Chamba



Training on Orientation and Need Assessment at FIS Chagola to Chutee Bihali under BPMU Kullu



Training on Orientation and Need Assessment at LIS Sohri under BPMU Hamirpur



Training camp on Orientation and Need Assessment at FIS Dohag under BPMU Sarkaghat

9.2.5 Pilot project for SHEP

- To ensure the effective implementation of the SHEP Approach at the HPCDP level, various steps are undertaken. These include selecting model sites for SHEP activities, designating Nodal officers at various PMU's and providing training programs to extension officers for the implementation of activities. Additionally, comprehensive guidelines for SHEP activities under the HPCDP project have been circulated among various PMUs to ensure uniformity in approach. These guidelines aim to streamline implementation processes across the diverse spectrum of selected model subprojects. During the FY 2023-24, the project has identified 28 model sites across 14 BPMUs for SHEP activity.
- IC Net has organized a wide range of webinars, training sessions, workshops and study visits to reinforce the implementation of SHEP activities during the reporting year, as detailed in the table below.

S.N.	Activities w.r.t SHEP approach	Date	No. of participants
A	Webinars/Workshops		
1	Online workshop on SHEP	27 th Dec, 2023	2
2	Online International SHEP workshop	3 rd March, 2023	5
3	The SHEP Approach International Workshop in Kenya	8 th Feb, 2024	5
B	Training on Market Oriented Approach		
1	Online Training on Guidance on SHEP	6 th Feb, 2023	10
2	Online Training on Market Oriented Approach	3 rd - 21 st April, 2023	2
3	Online Training on Market Oriented Approach	6 th Feb, 2024	19
C	Study Visits		
1	In country study visit to Jharkhand and Himachal Pradesh	5 th - 10 th June, 2023	2
2	In country study visit to Jharkhand	11 th - 14 th Dec, 2024	4
3	Visit of IC Net Team to HPCDP HQ, Hamirpur	22 nd Jan, 2024	2
4	Visit of IC Net Team to subproject sites under BPMU Bilaspur and BPMU Solan	23 rd - 24 th Jan, 2024	2

- Additionally, an in-depth exploration of SHEP's application was undertaken through an in-country study visit to Jharkhand by four officers from different DPMUs from 11th to 14th, December, 2023.
- On 22nd January, 2024, Mr. Takhiro TAKAGAKI, SHEP Training coordinator/ Rural survey, IC Net Limited, and Dr. Umesh Babu MS, National Consultant, IC Net Limited visited HPCDP headquarters to discuss the current status of SHEP implementation under HPCDP Phase-II. Discussions also revolved around the detail of model subprojects, monitoring activities and the role of master trainer.

- The IC Net Team also undertook field visits to subprojects of BPMU Bilaspur and BPMU Solan, aiming to actively engage with stakeholders and provide technical insights to enrich the SHEP approach. Interaction was held with extension officers, beneficiary farmer groups and market stakeholders during these visits to understand the SHEP approach's impact on the agricultural value chain.

The current status of activities during FY 2023-24 under the SHEP Approach is detailed in the below mentioned table :-

S.N.	Name of DPMU	Model subprojects	Preparatory Household Survey	Action Plan	Sensitization Meetings (HPCDP)	Market Survey	Implementation Status (Yes/No)
1	DPMU Hamirpur	6	In progress	In progress	In progress	In progress	No
2	DPMU Palampur	8	In progress	In progress	In progress	In progress	No
3	DPMU Mandi	8	In progress	In progress	In progress	In progress	No
4	DPMU Solan	6	In progress	In progress	In progress	In progress	No
Total		28					

- Further, the project has planned to capacitate entire extension staff in SHEP activity so as to inculcate the habit of grows to sell amongst the beneficiary farmers across 296 no. of subproject area. For the purpose nodal officers in this regard have been declared at the SPMU and all four DPMUs. Following their training sessions provided by IC Net, these Nodal Officers are spearheading workshops and training sessions for the extension staff, ensuring effective knowledge transfer and skill development in SHEP methodologies. Detail of Orientation Workshops/trainings to extension staff regarding SHEP Approach during the FY 2023-24 is given below:

S.N.	Name of DPMU	Name of Trainer	No. of trainings conducted	Date	No. of Trainee
1	DPMU Hamirpur	Mr. Devender Sankhyan	2	20.05.2023, 16.02.2024	10
2	DPMU Palampur	Mr. Rajneesh Kumar	1	02.02.2024	13
3	DPMU Mandi	Ms. Sonal Gupta	2	03.01.2024, 24.01.2024	11
4	DPMU Solan	Mr. Anil Jaswal	3	07.07.2023, 15.09.20223, 29.01.2024	7



Field visit at Khunti District, Jharkhand



Field visit at Khunti District, Jharkhand



Interaction with market stakeholders at Nagri Market, Ranchi, Jharkhand



Feedback session with IEC Team and participants at Jharkhand

In-Country Study Visit/ Exposure of SHEP Team to Jharkhand from 11th to 14th, December, 2023



Mr. Takhiro TAKAGAKI, SHEP Training coordinator/ Rural survey, IC Net Limited and Dr. Umesh Babu MS, National Consultant, IC Net Limited, visited the HPCDP HQ at Hamirpur (H.P.) on dated 22.01.2024



**SHEP team visit at LIS Makri under BPMU Bilaspur
on dated on 23.01.2024**



**SHEP team visit at FIS Jok to Rajauli Panewata at
BPMU Nahan on dated 24.01.2024**

9.2.6 R & D support

R & D support activities are allocated to SAU Palampur and the outcome of research results is monitored by PMU. 11 R&D projects are executed by SAU Palampur, out of 2 Nos. of projects entitled “Development and promotion of management technology against insect-pests of Brinjal” and “Management of root-knot nematode, *Meloidogyne incognita* in cucumber under protected cultivation” have been completed & nine projects currently underway utilizing ₹53.52 lakh in project funds for the financial year 2023-24. The outcomes of two R&D projects completed during the FY 2023-24 are given below.

Outcomes of R & D Project entitled “Management of root-knot nematode, *Meloidogyne incognita* in cucumber under protected cultivation”:

- Soil application of Fluopyram (Velum Prime) @ 0.125 ml/m² at the time of transplanting of cucumber and tomato was found to be promising in reducing the root-knot nematode population in soil as well as roots along with maximum increase in the yield of tomato (48.8%) and cucumber (44.4%) over untreated control under protected cultivation.
- Soil application of neem cake @ 200 g/m² fortified with *Purpureocillium lilacinum* @ 50 g/m² two weeks prior to transplanting + Fluopyram 40% SC @ 0.125 ml/m² applied at the time of transplanting was the best integrated treatment in enhancing the yield of tomato (55.2%) and cucumber (53.2%) with maximum reduction in root-knot index and root-knot nematode population in tomato (65.4 per 200 cc soil) and cucumber (210.0 per 200 cc soil) over untreated control.

Outcomes of R & D Project entitled “Development and promotion of management technology against insect-pests of Brinjal”:

- With the intervention of the project, technology comprising use of pheromone trap and spraying of insecticides at appropriate period was optimized based on pest infestation and fruit yield. Pheromone traps were installed after 25 days of transplanting and lure was changed at 45 days. The application of 0.4 g emamectin benzoate 5 SG or 0.4 ml spinosad 45 SC per litre of water was suggested with the initiation of trap catch in the pheromone trap. The application was repeated at an interval of 14 days.

Thus, only 6-7 sprays were made during the crop season. A waiting period of 4 days for emamectin benzoate and 2 days for spinosad was suggested for safe consumption of fruits.

- Spraying of emamectin benzoate was suggested to the farmers on the basis of its less cost, least pest infestation and enhanced fruit yield. Spinosad was costly chemical but it can be used as an alternate to emamectin benzoate so as to curtail the problem of insecticide resistance. The third best module was clipping & destroying of drooping shoots at 4 days interval and application of *Bacillus thuringiensis var. kurstaki* @1 kg/ha at the pest appearance. Repeat the application at 7 days interval.
- As a result of the technology, the cost of application of pesticides is reduced, thus reduction in the cost of production. Due to increased marketable fruit yield, the income of the farmers will be enhanced. The reduced number of pesticide applications will minimize the pesticide load on the crop as well as in the environment.

Detail of R & D Projects in CSKHPKV, Palampur

S. N.	Research and Seed Production Component	Total project cost (Rs. In Lakh)	Total expenditure till date (Rs. In Lakh)	Tentative date of completion
1	Multi-location testing of CMS based hybrids of cauliflower in Himachal Pradesh	20.00	17.95	30.09.2024
2	Multi-location testing of GMS based bacterial wilt resistant hybrids of chilli in Himachal Pradesh	20.00	17.91	30.09.2024
3	Generation of double haploid through induced androgenesis in head cabbage (<i>Brassica oleracea var. capitata</i>) and multilocation of tomato in H.P.	20.00	18.71	30.06.2024
4	Multilocal testing and validation of newly developed bacterial wilt resistant and high yielding bell pepper lines/ hybrids in H.P.	10.00	10.00	Final progress report awaited
5	Multilocal testing and validation of newly developed yellow vein mosaic virus resistant and high yielding okra lines/ hybrids in H.P.	10.00	10.00	Final progress report awaited
6	Development and promotion of management technology against insect-pests of Brinjal	20.00	20.00	Final progress report awaited
7	Management of root-knot nematode, <i>Meloidogyne incognita</i> in cucumber under protected cultivation	20.00	20.00	Final progress report awaited
8	Assessment, validation and refinement of disease management technology for vegetable crops	30.00	26.75	30.06.2024
9	Enhancing rice production in high-altitude areas of Himachal Pradesh by development and popularization of high yielding, cold tolerant japonica rice varieties through farmers' participatory approach	40.00	40.00	Final progress report awaited
10	Genetic amelioration of Kala Zeera (<i>Bunium persicum</i> Boiss) using tissue culture/micro propagation approach	30.00	30.00	Final progress report awaited
11	Popularization of potential A B C crops of North Western Himalayas as vegetable and seed under organic and natural farming conditions through participatory plant breeding. (A B C= Amaranthus, Buckwheat and Chenopodium)	30.00	25.70	30.09.2024
TOTAL		250.00	237.02	



Kala zeera plants under apple orchard at MAREC, Sangla



Multilocal testing and validation of hybrids in H.P.



On-Campus Training Programme on Popularization of potential crops of North Western Himalayas at Karsog



Amaranth at Kelodhar, Karsog, Distt. Mandi

9.2.7 Infrastructure development at SAU for vegetable seed production

Two seed production farms in Dhobhi Ghaat (9 ha.) and Banuri (10 ha.) area are being developed within the department of Seed Science & Technology, CSKHPKV, Palampur. Work for development of Model Seed Farm is going to be completed shortly in which funds worth ₹17.51 lakh have already been utilized. The objectives of infrastructure development for vegetable seed production in the SAU is to establish the model seed production farm by utilizing/harnessing the maximum potential of university land resource by developing new farm area to put under quality seed production with irrigation facilities, other, related infrastructure and its protection against wild and stray animals. The target seeds are nucleus, breeder, foundation and certified/TL of vegetables, pulses, oilseeds, forage and grasses, spices and cereals. SAU will supply quality seeds to the farmers, which will support them to diversify the traditional cropping pattern as well as HRD in seed production of vegetables and other crops through training to farmers and enable them to produce the seeds at their own farms.



Model Seed Farm at SAUs



Breeder Seed Production of Broccoli Variety, Palam Samridhi at Model Seed Farm at SAUs

9.2.8 Establishment of centre of excellence for vegetable nursery production

In the FY 2023-24, a total of ₹8.93 lakh has been utilized for the development of Centre of Excellence for vegetable nursery production at CSKHPKV, Palampur. Practical nursery production technologies were implemented and a series of 6 no. training-cum-demonstration programmes, each of two days were conducted in which 300 farmers, farm women and rural youth participated. Production of quality planting material through soil-less media, through seed, grafting techniques, seedling multiplication through cutting is going on under Hi tech polyhouse as well as growth chambers.

Crop wise detail of vegetable seedlings has been produced and sold:

Name of crop	Seedlings Produced (Nos.)	Seedlings Sold (nos.)	Revenue Generated (₹)
Bitter gourd	Protray @ Rs 400/Protray = 60 Polytube @ Rs15/polytube = 1402	4402	45030
Cucumber	Protray @ Rs 400/Protray = 97 Polytube @ Rs15/polytube = 365	5215	44275
Bottle gourd	Protray @ Rs 400/Protray = 23 Polytube @ Rs15/polytube = 441	1591	15815
Sponge/ridge gourd	Protray @ Rs 400/Protray = 43 Polytube @ Rs15/polytube = 47	2197	17905
Tomato	Seedling @ Rs 2.5/seedling = 11784 Protray @ Rs 400/Protray = 64	18184	55060
Brinjal	Seedling @ Rs 2.5/seedling = 11800 Protray @ Rs 400/Protray = 27	14500	40300
Capsicum	Seedling @ Rs 2.5/seedling = 7125 Protray @ Rs 400/Protray = 51	12225	38212
Chilli	Seedlings @ Rs 1/seedling = 17450	17450	17450
Onion	Hybrid @ Rs 550/kg = 39 kg OP @ Rs 250/kg = 800 kg	689 kg	183950
Cauliflower	Seedling @ Rs 2.5/seedling = 15050	15050	37625
Total		90,814 No. + 689 kg	4,97,622



**Cucurbits in Polytubes at Centre of Excellence,
Palampur**



Healthy onion nursery ready for sale



Training programme at Dashlera (Bilaspur)



Training programme at Gori Dhibiri (Hamirpur)



Training programme at Kothi (Kangra)



Training programme at Mohan Ghatti (Mandi)

9.2.9 Promotion of Shiitake Mushroom Cultivation (Management Cost for SCTC)

- Trials on Shiitake Cultivation at SCTC, Palampur started in April, 2022 and protocols for standard production technologies and cultivation practices suited to local conditions have been developed which has resulted in excellent quality & production of Shiitake Mushrooms. Disseminators trained in Japan are deployed to enhance the implementation of production technologies and cultivation at SCTC Palampur. Under this activity, ₹16.29 lakh have been utilised during the FY 2023-24.
- During the FY 2023-24, eleven training sessions have been held at SCTC for clusters of Baijnath, Sagoor, Parour, Bhatoor, Palampur-I & Palampur-II areas, with 5 training programmes of 6 days each on Shiitake Cultivation in which 147 farmers trained. Also 6 training programmes were also organized on Shiitake” Post-Harvest Processing & Handling” of 2 Days each covering above mentioned clusters benefitting 160 farmers.
- In our commitment to furthering Shiitake mushroom cultivation, 2675 trial blocks were distributed to farmers across different locations for adaptability studies. During the financial year 2023-24, 1139 no. of Ready to fruit blocks have been sold. Harvesting fresh mushrooms from trial blocks resulted in the sale of 54.58 kg locally.
- During the reporting year, 49.4 kg of mushrooms were properly dried, packaged and sold in various forms—whole dried, flakes and powder. SCTC have generated revenue of ₹ 2.83 lakh by selling fresh and dried shiitake mushroom along with ready to fruit blocks.
- The establishment of an In-house spawn lab and Incubation centre marks a pivotal step towards ensuring the sustainability of Shiitake mushroom cultivation. These facilities also play a crucial role in the production process by providing a controlled environment for the creation of mushroom spawn. Also an in-house spawn lab and incubation centre at SCTC Palampur are under progress to support Shiitake cultivation practices.
- The Director of DMR-ICAR, Solan, Dr. V.P. Sharma, paid the SCTC a visit and expressed satisfaction for work being conducted and assured his full support for the success of SCTC. It is important to note that SCTC spawn is currently obtained from DMR-ICAR, Solan.
- One of the noteworthy visits to the SCTC was made by the Worthy Secretary (Agriculture), Dr. C Paulrasu, IAS, to the GoHP. He observed the work being done at the SCTC and he appreciated the efforts in SCTC management and added that Shiitake cultivation can supplement the income of the farmers of the state as well as add to the livelihood opportunities to the small and marginal farmers of the state.
- Dr. Ravinder Kumar Sharma, Former Director of the National Horticulture Board and currently serving as a Consultant for the Ministry of Food Processing Industries, Government of India, commended SCTC's work during his visit.
- A notable visit to SCTC was made by Smt. Kumud Singh, IAS, the Director of Agriculture, accompanied by Dr. Sunil Chauhan, Project Director of HPCDP (Phase-II), JICA-ODA; the Joint Director of Agriculture, North Zone at Dharmshala and the Deputy Director of Agriculture, District Kangra. The Director of Agriculture praised SCTC's work and emphasized on potential of Shiitake cultivation to boost farmers' income and livelihood opportunities, stressing the need for effective marketing, possibly in collaboration with the tourism department.

- SCTC's participation in the 16th edition of the Tsunagaru Lab seminar, held on 27th February, 2024, at The Park New Delhi, focusing on "Bridging the gap – Technology and Grassroots Innovation in the Agriculture Sector," was also notable. Worthy Project Director, Dr. Sunil Chauhan and other officials of HPCDP participated virtually in the event. Mr. Sapan Thakur, representing HPCDP (Phase-II), JICA-ODA, played a significant role during the seminar. Additionally, the Shiitake Cultivation Training Centre (SCTC), Palampur participated as an exhibitor. During the seminar, Mr. Sapan Thakur engaged in fruitful discussions with various stakeholder. He interacted with Landcraft, specializing in high-end gourmet food products, explored apple procurement opportunities with Mr. Rahat from Fruitholic and discussed market linkages for HP Farmers with De Haat and Ice make.



**Visit of Worthy Director of Agriculture,
Smt. Kumud Singh (IAS)
at SCTC Palampur on dated 05.01.2024**



Farmers from Gohar visited SCTC, Palampur



**16th Tsunagaru Lab Seminar at The Park Hotel,
New Delhi, focusing on "Bridging the Gap - Technology
and Grassroots Innovation in the
Agriculture Sector on dated 27.02.2024**



**Mr. Sapan Thakur SCTC Disseminator
Palampur demonstrating SCTC products in Seminar on
27.02.2024 at Park Hotel, New Delhi**



Practical training on Harvesting of Shiitake Mushroom



Practical training on Grading and sorting of Shiitake Mushroom



Visit of Dr. VP Sharma, Director DMR Solan at SCTC



Training Program at SCTC Palampur



Farmers from Chamba, participated in an exposure visit held at SCTC Palampur Palampur



Shiitake Mushroom Blocks Palampur

9.2.10 Corpus Fund:

In accordance with MoD, the project includes provisions for financial assistance and maintaining assets established under the project by creating a corpus fund to meet the needs of Farmer Producer Organizations (FPOs). In line with this objective, JICA India has submitted a revised proposal and guidelines for further revisions and the document is currently being reviewed and updated.

9.2.11 Bringing FPOs Up as a Business Entity

In order to enhance the partnership between public and private sector, a list of potential Japanese and Indian companies has been mentioned in MoD. These companies express interest in providing a supply chain for agricultural produce in terms of quality and quantity. In this connection, the proposal for collaboration between HPCDP Phase-II and Matsuda Sangyo Trading India Private Limited (Japanese Trading Company) has been approved by the 5th Executive Committee of HPADS. The proposal outlines a strategic plan for cultivating and marketing of Broccoli crop in the HPCDP JICA subproject areas. Additionally, Mr. Taki's visited to Kullu District along with Dr. Sunil Chauhan, Worthy Project Director, HPCDP (Phase-II) underscored the exceptional potential for Broccoli cultivation at higher altitudes, emphasizing superior quality and reduced pest infestation. The proposal introduced an innovative approach for purchasing Frozen Broccoli from India and investing in establishing a frozen food factory in Himachal Pradesh. Mr. Taki emphasizes the need to balance benefit and profit, considering both high-quality crop production and reasonable raw material prices to benefit farmers. The proposal further targets global market expansion, positioning Indian produce competitively in the Japanese market by offering a price lower than Ecuador and quality surpassing China. The proposal highlighted the comprehensive and strategic plan that leverages the unique qualities of Broccoli cultivation, introduces innovative strategies for a frozen food factory, emphasized on collaboration and global market expansion.





Visit with Mr. Taki, representative of Japanese Trading Company (Matsuda Sangyo Trading India Private Limited) at Kullu District

9.2.12 Centre of Excellence

As envisaged in MoD, regarding Establishment of Centre of Excellence for vegetable nursery production. In this connection, the CoE for High-Tech Nursery production is proposed at KVK Bara, Hamirpur under HPCDP (Phase-II), JICA-ODA. As per the work orders construction work has been successfully intimated and is currently in progress.



Inspection of Construction Work of Centre of Excellence at Bara

9.2.13 Farm Mechanization

Farm mechanization plays a crucial role in optimizing resource utilization and economic efficiency. The MoD provides detailed financial assistance in Attachment 6-2 (Activity- 2.2.6 "Provision of Farm Machinery"). All the District Project Management Units (DPMUs) and Block Project Management Units (BPMUs) are further utilizing the allocated budget under farm mechanization. Additionally, the provision of farm machinery to farmers on a cost-sharing basis has been initiated in accordance with farm mechanization guidelines. Furthermore, a budget of ₹ 25,97,853 (Twenty-Five lakh ninety-seven thousand eight hundred fifty-three rupees only) has been utilized by DPMUs in procurement of farm mechanization.



**Inspection of Machinery at Kullu under BPMU Kullu
on dated 05.03.2024**



**Inspection of Machinery at FIS Kailer under BPMU
Solan on dated 13.03.2024**

9.3 Value Chain & Market Development

Ongoing construction efforts within 13 Mandis of APMC are focused on strengthening of market yards by modernizing facilities. The primary objective is to empower farmers and traders, enabling them for marketing of agricultural produce more efficiently and profitably. This effort has far-reaching impacts, benefiting the entire supply chain for vegetables and fruits, not only within Himachal Pradesh but also extending to regions beyond its border. Amount of ₹11.22 crore has been utilized during the reporting year by the project through HPSAMB, Shimla, with the objective of upgrading designated APMC Market Yards by providing the primary space for farmers to display their produce for auction, ensuring a hygienic and regulated trading environment. Auction halls have been constructed to facilitate the trading process with seating arrangements for producers and farmer. Additionally, construction of boundary and protection walls has been done to provide security in the trading area and ensure the safety of the agricultural produce. Also, Kisan Bhawans have been constructed which are equipped with facilities like meeting rooms, rest rooms & stay arrangements of farmers who travel from afar places to trade at the AMPC. Shops in the APMC were also constructed which serves as door steps market facility for farmers and traders.

The detail of the upgraded Sub Market Yards along with utilized amount up to March, 2024 is as follows:

S.N.	Name of Sub Market Yard	Expenditure upto March, 2024 (in lakh)
1	Sub Market Yard Kangra/Jassor	1.22
2	Sub Market Yard Kangra/Passu	0.91
3	Sub Market Yard Kullu& LS/ Chauribihal	2.85
4	Sub Market Yard Kullu& LS/ Patlikuhal	0.45
5	Sub Market Yard Kullu& LS/Khegsu	0.09
6	Sub Market Yard Mandi/Takoli	5.28
7	Sub Market Yard Sirmour/ Nohradhar	1.85
8	Sub Market Yard Shimla & Kinnaur/Tapri	1.85
9	Sub Market Yard Sirmaur/Ghandoori	0.93
10	Sub Market Yard Sirmaur/Khairi	1.07
11	Sub Market Yard Solan/Solan	9.29
12	Sub Market Yard Solan/Vaknaghat	2.52
13	Sub Market Yard Solan/Kunihar	1.80
Total		30.12



Sub Market Yard Kunihar, APMC Solan



Sub Market Yard, Ghanduri, APMC Sirmaur



Sub Market Yard Takoli



Sub Market Yard Chaurbihal (Manali)



Sub Market Yard Jassur



Sub Market Yard Khairi



Sub Market Yard Tapri



Sub Market Yard Passu



Sub Market Yard Takoli



Sub Market Yard Chaurbihal (Manali)



Sub Market Yard Jassur



Sub Market Yard Khairi



Sub Market Yard Khagsu

9.4 Institutional Development Component

Under the Institutional Development Component of the project, various activities have been proposed. These activities mainly aim to enhance the capacity of PMU staff through trainings at premier institutes as well as study/exposure visits to the sites having successful introduction of technological innovations in the relevant field within & outside the state.

9.4.1 Capacity Development of Project Staff on PDCA Cycle

- To enhance the capabilities of the PMU staff for implementation of project activities, two HRD training sessions were held at the Himachal Institute of Public Administration in Shimla, focusing on team building, leadership motivation/inspiration and stress management for PMU staff. These sessions aimed to improve project implementation by fostering collaboration, enhancing leadership skills, boosting motivation and equipping staff with stress coping mechanisms.
- During the FY 2023-24, six number of peer learning workshops were conducted at the State Project Management Unit, aimed at aligning all stakeholders with the project's objectives and processes.



Training on PIM, PRA and SDP at DPMU Palampur



Training on PIM, PRA and SDP at DPMU Solan

- During the FY 2023-24, two exposure visits were organized to Sahyadri Farmer Producer Company Private Limited in Nashik, Maharashtra with a total expenditure of ₹1.87 lakh. The first visit organised from 21st to 26th May, 2023 with the participation of seven officers from different departments. The subsequent visit took place from 4th to 8th September, 2023 with eight officers participating from various departments. The primary objectives of the said exposure visits were to provide an immersive experience in food processing and preservation techniques for vegetables and fruits. Participants were exposed to the intricate processes involved including the utilization of warehouses, machinery and cutting-edge technologies like liquid nitrogen to transform perishable produce into frozen delicacies while maintaining texture and nutrition. Additionally, the visits aimed to facilitate learning, capacity building, networking and collaboration among stakeholders within the agricultural sector. By sharing best practices and fostering innovation, these visits were instrumental in equipping project participants with practical insights and strategic approaches that can be implemented within the frameworks of APMC and HPCDP. Ultimately, the goal was to empower farmers, enhance their income and promote sustainable agricultural growth through value addition and efficient utilization of resources.



**Exposure visit to Sahyadri Farmer Producer Company Pvt. Limited, Nashik, Maharashtra
on dated 21st to 26th, May, 2023**



**Exposure visit to Sahyadri Farmer Producer Company Pvt. Limited, Nashik, Maharashtra
on dated 4th to 8th, September, 2023**

9.4.2 Procurement of ICT related equipment :-

The equipment have been provided for the establishment of an MIS and ICT system in the PMU, amounting to ₹53.70 lakh in the FY 2023-24. The MIS/GIS cell of SPMU, undertook several key activities, including:

- The prototype of dashboard facility was created to monitor the progress and achievements of project activities. Few pages are added to dashboard on different components and sub components with analytics.
- In addition to it, a Google Sheet-based tracking system for the Movement (field visits) Plan and actual movement of all officials has been developed and successfully rolled out. A vendor is also hired for “Design, Development & Deployment of ICT based integrated MIS and GIS application” through tender process and the application development process is currently underway.
- Simultaneously, “Monthly Progress Report” especially for MIS data progress has been initiated to assess the performance of all Project Management Units (PMUs), providing valuable insights into the overall progress of the project activities.

- The vendor engaged for development of MIS-GIS Application had submitted Inception Report, Software Requirement Specifications report and Detailed Project Report after conducting detailed Requirement Assessment as per the TOR (Terms of Reference). The module wise development of the application is under progress.
- The prototypes already being used in project for data collection was shared with vendor to expedite the development process. The database design according to the existing data collections forms is in final stage.
- The construction monitoring and Movement modules are prioritized to roll out in the initial stage. The existing data migration is also prioritized. The application development progress is closely monitored on regular basis.
- The GIS data being prepared by the agency, engaged for 'Survey Investigation and Design' (SID) of Detailed Project Report (DPR) for Sub-Projects. The GIS data consist of GCA, CCA, Chak and Proposed structures. The data is standardized for uniformity and MIS-GIS integration.
- The sample templates of dataset for each scheme type have been shared with the agency to prepare the entire dataset accordingly.
- The digitization of Sub-Project Development Plans (Village Level Micro Plans) data of first priority Sub-Project (63nos.) is completed. The data analysis for planning and rollout of extension activities is underway.

9.4.3 Construction of Training Centres

- Construction works in two farmer training centers (i.e., at DPMU Solan and Hamirpur) have been completed. Funds worth ₹130.76 Crores have been utilized during the FY 2023-24 for this activity.
- The primary objective of these training centers is to facilitate training, meetings, seminars, workshops and peer learning for the beneficiaries of the PMU's and other extension activities.



Farmers Training Centre, Solan



Farmer Training Centre, Bangana

9.4.4 Preparation of Information Education & Communication (IEC) Material For Dissemination :-

- Slogans on crop diversification and other project related activities shared with BPMUs for wall writing at sub-project sites. Wall writing serves as a valuable communication tool in project management, community engagement and awareness-building efforts, helping to achieve project objectives. In FY 2023-2024, wall writing across 41 subprojects has been completed with an utilization of funds amounting to ₹0.84 lakh. During the FY 2023-24, Street Plays on present situation and improvement have been organized across 27 subprojects utilizing a budget of ₹1.62 lakh.
- In the FY 2023-24, various communication materials were prepared, designed and printed to disseminate the objectives and highlight the progress of ongoing activities of the project. These include the Annual Reports for 2021-22 and 2022-23, an introductory document titled "Ek Parichay" for the HPCDP project, bilingual docket file folders, a booklet on Shiitake cultivation, wall calendars for the year 2024 and four bi-monthly magazines (June, 2023 to January, 2024). Funds to the tune of ₹3.52 lakh have been utilized under the activity "Publication of handouts and manuals" for the production and distribution of these materials.
- Additionally, daily posts showcasing diverse activities by different PMUs are consistently compiled and shared across social media platforms like Facebook, Instagram, YouTube and Twitter engaging a reach of almost 50K during this FY.
- Pre Project videography has been completed for 35 subprojects and funds to the tune of ₹2.61 lakh has been utilized under "Preparation of video-programs" showcasing pre-project condition of sub project sites in the financial year. During the reporting year, ₹4.05 lakh has been utilized under activity Farmer's Fair in each cluster.

Detail of publications

S.N.	Particulars	No. of copies published
1	Hindi Docket	1000
2	English Docket	1000
3	Annual Report (2021-22)	100
4	Annual Report (2022-23)	100
5	Bimonthly Magazine (June-July, 2023)	1000
6	Calendars	3000
7	Bimonthly Magazine (Aug-Sep, 2023)	1000
8	Shiitake Booklet	1000
9	Ek Parichay	2500
10	Table Calendar	300
11	Bimonthly Magazine (Oct-Nov, 2023)	1000
12	Bimonthly Magazine (Dec-2023, Jan, 2024)	1000
13	IEC Volume-I	100



Wall writing at FIS Dulla under BPMU Chamba



Wall writing at FIS Ghulanu under BPMU Sarkaghat



Street Play at FIS Upper and Lower Behna under BPMU Sarkaghat



Street Play at FIS Kothi Batala under BPMU Bilaspur



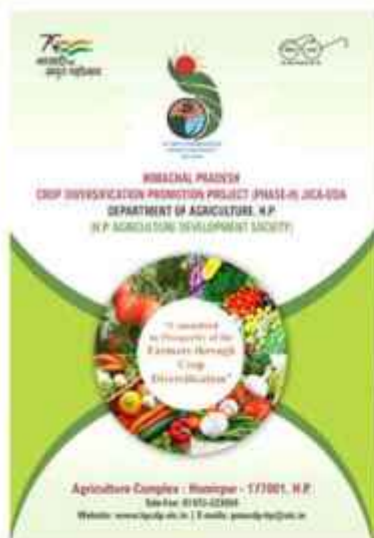
BIMONTHLY MAGAZINE



ANNUAL REPORT 2021-22



EK PARICHAY



ENGLISH DOCKET



ANNUAL REPORT 2022-23



HINDI DOCKET



BOOKLET OF SHITAKE



BIMONTHLY MAGAZINE



BOOKLET ON COLE CROPS



TABLE CALENDAR 2024



WALL CALENDAR 2024



WALL CALENDAR 2024



Top content based on reach On Project's Instagram Page with 2,40,000 plays & 5557 like

9.4.5 Capacity Development of Agriculture Extension Staff

During the FY 2023-24, various trainings for capacity development of officers of the project under different premier institutes across the state were conducted on topics mentioned in MoD. These programs aimed to enhance their knowledge and skills across various domains related to sustainable agriculture practices, crop management and market-oriented approaches. The detail of the various trainings conducted is given below:

S.N.	Name of training programme	No. of training	No. of Participants	Total Expenditure (Rs.)
1	Soil Analysis and soil health management	2	38	96900
2	Farming practices on common and exotic vegetable with field exercise	2	41	172550
3	Integrated Pest management	2	40	102000
4	Integrated Nutrient management	2	35	89250
	Total	8	154	460700



**Training on Protected Farming Techniques at CSKHPKV
Palampur**



Training on Market Led Extension at UHF Nauni



**Training on Soil Sampling, Soil analysis, nutrient
management and fertilizers application at KVK**



Training on Market Led Extension at UHF Nauni



**Training on Integrated Nutrient Management at KVK
Sundernagar Mandi**



**Training on Integrated Nutrient Management at KVK
Sundernagar**

9.4.6 International/national/state level workshop/seminars:

State Level Workshops

As specified in the MoD, under activity 4.2.5(3) project has provisions of state level workshops. In this connection, 2 No. of workshop have been organized at Hotel Tea Bud Palampur. The first workshop held on 4th March, 2024, titled as "Empowering Himachal Pradesh: Enhancing Market Opportunities for SHGs and Self-Employed Youth in On-Farm and Off-Farm Products." Dr. Pawan Kumar, Additional Director, Department of Agriculture, Government of Himachal Pradesh, graced the event in the cordial presence of Project Director, Dr. Sunil Chauhan. The main objective of the workshop was to familiarizing participants with the concept of local food entrepreneurship, emphasizing the role of SHG entrepreneurship and fostering collaborative learning among participants.



SHG Ambika, Vill. Beri P.O Kothi Tehsil Balh, District Mandi showcasing processed and labelled food products



SHG Jai Devi Kamrunag-Kutheher, P.O Bassa, Tehsil Gohar, District Mandi showcasing processed and labelled food products



Dr. Pawan Kumar's Insightful Discourse on Marketing for SHG Products



Opening Remarks by Dr. Sunil Chauhan, Project Director



Keynote speaker Mr. Akshay Jasrotia, Chairman Baijnath Pragtisheel Kisan Utpadak Producer Company Limited



Mrs. Anita, President, Radhe Krishna SHG honoured for inspiring lecture on Introduction of different SHG products and marketing channels

The second workshop titled "Strengthening Agriculture through Market-Led Extension and Value Chain" was organized on 5th March, 2024, Dr. Madhu Chaudhary, HPAS, Registrar of CSKHPKV, Palampur Chaired the workshop. The event, aimed to facilitate collaborative efforts and explore innovative strategies to enhance market opportunities for agricultural produce. The workshop emphasized the significance of market-led initiatives in driving economic growth and sustainability in agriculture. These workshops featured insightful sessions, including technical presentations, discussions and group interactions. Notable speakers from diverse fields shared their expertise on topics ranging from international food safety standards to community empowerment through beekeeping. These workshops served as a platform for stakeholders to exchange knowledge, foster collaborations and chart a path towards sustainable agricultural development in Himachal Pradesh.



**Tenacious Bee collective, District, Kangra
showcasing honey products**



**Sivambu International, District Una (H.P.)
showcasing process & labelled foods products**



**Dr. Madhu Chaudhary's Insightful Address on
Enhancing Market Strategies for Farmers**



**Opening Remarks by
Dr. Sunil Chauhan, Project Director**



**Keynote speaker Mr. Karan Jaswal, Senior Manager,
Government Liaisoning, Shimla Hills / Shimla Red**



**SHG Jai Devi Kamrunag-Kutheher honoured for
active participation in the workshop**

9.4.7 Overseas Training, Exposure/Study visits of Project staff and other stakeholders:

- Training programme from 18th July to 11th August, 2023 on the subject entitled “Prospective Agriculture Technologies as Solution of Climate Change” was attended by Dr. Rakesh Sharma SMS Agriculture HPCDP (Phase II) at Tsukuba, Japan along with participants from 6 other countries viz, Algeria, Pakistan, Turkey, Tanzania, Rwanda & Mozambique during the FY 2023-24. Training programme focussed on understanding the adaptation and mitigation strategies against climate change in agriculture. The frequency and intensity of extreme weather events is also increasing all over world. Now a days for reducing Greenhouse Gases Emissions (GHGs) globally, different countries are bound to decrease respective GHGs emission intensity as per Nationally Determined Contributions (NDC), which are self-defined national climate pledges under the Paris agreement, detailing what countries will do to help meet the global goal against climate impacts and ensure sufficient finance to support these efforts. The detail report of the training programme and its learning submitted to Govt. HP/ JICA India and shared with the PMU's.



Dr. Jayant Ratna, ADO, Kullu, attended the "Knowledge Co-Creation (KCC) Program on Vegetable Production Technology for Livelihood Improvement of Small-Scale Farmers" during the FY 2023-24. The training included both online and in-person sessions. He attended the online training from 8th Feb to 24th Feb, 2023, and the in-person training in Japan from 27th Feb to 13th Oct, 2023. Additionally, he completed another online training session from 16th Oct to 10th Nov, 2023.



9.5 Procurement of Services :

9.5.1 Procurement of Outsource Services:

The Request for Proposal (RFP) for the procurement of outsource services, specifically for the "Hiring of Service Providers" to provide skilled and unskilled manpower on an outsource basis from companies/partnership firms registered under the Indian Partnership Act, 1932/Limited Liability Partnership registered under LLP Act 2008/proprietary firm, was issued via E-Tender on 15th July, 2022. The bid evaluation process took place, with the technical evaluation conducted on 5th August, 2022, followed by the opening of financial bids on 23rd August, 2022. M/s R.K. Company, Hamirpur, emerged as the lowest bidder.

Subsequently, the service agreement for the award of the contract to provide skilled and unskilled manpower on an outsource basis for HPCDP (Phase-II), JICA ODA, was signed on 30th September, 2022. The contract period spans from 1st October, 2022 to 30th September, 2027, covering a duration of five years.

9.5.2 Procurement of services of auditor for the project:

A committee has been framed for the selection of the auditors/ audit agency on dated 27.12.2022. The Expression of Interest for the selection/appointment of statutory auditor for JICA-ODA funded project Phase-II HPCDP were invited vide EoI No. Agr. SPMU-(B) 2021-Vol-I/2021-3627 dated 22nd Feb, 2023. All the bid proposals were technically evaluated on the basis of criteria mentioned in the EoI document on dated 15.03.2023. The financial bids were opened on 8th May, 2023, after scrutiny of comparative statement, Goyal Parul & Co. has quoted lowest financial amount and the contract for audit of HPCDP (Phase-II) JICA-ODA was signed on dated 10th July, 2023 between the Project Director, HPCDP and M/s Goyal Parul & Co., Chartered Accountant.

9.5.3 Procurement of Sanitation Services:

The bid for outsourcing for sanitization services was opened on 26th July, 2022 on GeM Portal and after technical and financial evaluation rates quoted by the M/s Hameer Facility Management Privat Ltd was lowest and the contact agreement was signed on 30th September, 2022 between the Project Director, HPCDP and above said firm. The contact commenced w.e.f 1st October, 2022 to 30th September, 2026 for four years.

9.5.4 Procurement of services for designing and developing MIS/GID Dashboard:

Hiring of an Agency for Design Development and Deployment of ICT based Integrated MIS and GIS Application software tender floated through E-Tender on 06th Sep, 2023 tender ID 2023_HPCDP_78616_1. The bid is opened on 21st Sep, 2023 thereafter bid evaluation process took place, with the technical evaluation conducted, 21st Sep, 2023 onward. The financial bid opened on 04th Oct, 2023. M/s Cyber SWIFT Infotech Pvt. Ltd. P.S. Srijan tech park, 6th Floor, Kolkata, emerged as the lowest bidder. The award of contract was issued to L1 on dated 25th Nov, 2023. Accordingly, agreement has been signed on 05th Dec, 2023 between HPCDP & concerned service provider for the period of 05th Dec, 2023 to Dec, 2029.

9.5.5 Setting up of PMC:

After following international competitive bidding in accordance with the prescribed guidelines of the donor agency i.e. JICA India. The contract agreement with PMC was signed on 26th May, 2022 for entire project period i.e. upto 2029. The detail of different experts positions along with intended man-months is given below :

Himachal Pradesh Agriculture Development Society

S. N.	Position	Name of Expert	Man-months	MM upto April'24	Percentage
1	Team Leader	Mr. Suman Sijapati	24	3.12	13%
2	Co-Team Leader	Mr. Anil Kumar Agarwal	76	12.36	16%
3	Design Engineer -1	Mr. Bipan Chand Samkaria	76	5.64	7%
4	Construction Manager (CE-1)	Er. Om Parkash Chauhan	24	14.60	61%
5	Institutional Dev. Expert (FPO)	Mr. Ravipati Kishore	43	0.64	1%
6	MIS Expert	Mr. Narendra Sharma	22	6.00	27%
7	GIS Expert	Mr. Sudhir Kumar Behera	22	13.43	61%
8	Design Engineer -2	Er. Ashwani Bhardwaj	10	7.20	72%
9	Construction Engineer-4	Mr. Mohan Goud Macherla	27	1.00	4%
10	Agronomist (Cereal)	Dr. Purushottam Lal Sharma	17	7.68	45%
11	Agronomist (Vegetable)	Dr. Ravinder Kumar Sharma	36	3.80	11%
12	Vegetable Expert (Protected Cultivation)	Dr. Chaman Lal Chauhan	8	3.00	38%
13	Institutional Dev. Expert (DOA)	Mr. T Ekande	34	0.52	2%
14	Environment & Social Expert	Dr. Raj Kumar Dogra	10	8.24	82%
15	Livelihood Support Expert (Agriculture)	Mrs. Picky Sharma	8	3.68	46%
16	IEC Expert (Media)	Mr. Rajeshwar Thakur	20	7.00	35%
17	B&R Expert	Mr. Shashi Kant Sharma	6	3.92	65%
18	Mechanization Expert	Dr. Y C Bhatt	6	0.88	15%
19	Post Harvest & Processing Expert	Dr. Arjoo Nandal	10	2.12	21%

S. N.	Position	Name of Expert
1	Institutional Dev. Expert (DOA) (Proposed)	Dr. R S Thakur
2	Construction Engineer	Er. P S Chauhan

Total man-months (Key & Non-key staff)	723.00 Man-months
Man-months consumed	104.83 Man-months
Percentage of MM consumed	14.50%
Consultancy period lapsed	19.28%

Details of Man-months consumed and field-days consumed:

Months	All experts for overall project activities			Design and Construction Engineers for Civil works		
	Man-months consumed	Man-days consumed	Field-days consumed	Man-months consumed	Man-days consumed	Field-days consumed
Dec '22	0.52	13	0	0.08	2	0
Jan '23	3.12	78	10	0.56	14	1
Feb '23	5.12	128	22	2.12	53	11
Mar '23	5.40	135	32	3.00	75	21
Apr '23	6.88	172	25	2.84	71	19
May '23	9.08	227	32	3.00	75	14
Jun '23	7.92	198	37	3.00	75	28
Jul '23	6.20	155	39	2.76	69	37
Aug '23	8.99	225	34	3.00	75	21
Sep '23	8.16	204	28	2.96	74	23
Oct '23	9.24	231	27	2.88	72	10

Nov '23	8.08	202	31	2.88	72	15
Dec '23	7.68	192	31	2.84	71	14
Jan '24	7.84	196	28	2.24	56	15
Feb '24	8.00	200	28	2.00	50	20
Mar '24	9.40	235	29	2.00	50	19
Apr '24	7.68	192	35	1.00	25	26
Total	119.31	2,983	468	39.16	979	294
Percentage			16%			30%

10 Deliverables during 2023-24:

Category	Reporting Deliverable	Status	Timing	Remarks
Consultancy Services	Inception Report	Submitted (1 no.)	Within 1 month after commencement of services	
	Design Review Reports	Submitting regularly	Every month	
	Detailed Project Reports	DPRs reviewed (192 nos.)	Within fifteen days from design review report	Prepared by Design Consultants
	Pre-qualification and final bid documents	Submitted (1 no.)	Within fifteen days from final revised design	
	Contract Management Guidelines	Draft submitted	Within four months from inception of services and on year-to-year basis	
	Monthly Progress Reports	Submitting regularly (15 nos.)	Every month (before 5 th of next month), except the month coinciding with submission of the Quarterly Progress and Annual Report.	
	Quarterly Progress Reports	Submitting regularly (4 nos.)	Every quarter (before 5 th of next quarter); except the quarter coinciding with submission of the Annual report	
	Operation & Maintenance Manual (English)	Draft submitted	Within twelve months from inception of services	
	Annual Progress Reports	Submitted for FY 22-23	15 th day of the first month of the financial year	Under progress for FY 23-24.
	Completion Report of the Consulting Services	Will be submitted in due time	One month before the of the contract	

Category	Reporting Deliverable	Status	Timing	Remarks
Construction Supervision	Quality Control Report	Submitting regularly	Every month	
	Completion reports for sub-projects	Will be submitted in due time	Within one month from the date of completion	
Training	Training Plan	Submitted before conducting Trainings	At appropriate timing as per the requirement	Prepared by Design Consultants
	Training Execution and Evaluation Report	Separate reports will be prepared for forth coming trainings	Within 1 month after training	Reporting of trainings included in MPRs
Environmental & Social Safeguard	Environmental Monitoring Report	Will be submitted after the concerned expert is deployed	Every Quarter	

9.6 Executive Committee (EC) meetings

9.6.1 4th Meeting of Executive Committee (EC):

4th Meeting of Executive Committee (EC), Himachal Pradesh Agricultural Development Society for HP Crop Diversification Promotion Project, Phase-II held on 4th May, 2023 at 11:00 AM in the Committee Room, Armsdale Building, H.P. Secretariat, Shimla under the Chairmanship of Sh. Rakesh Kanwar, Secretary (Agriculture) to the Govt. of Himachal Pradesh-cum- Chairman Executive Committee of the HPADS. In this meeting the status of preparedness as well as pace of ongoing activities was discussed.

- The EC has approved the Livelihood Support Programme, including the deployment of ERADA professionals/experts, for mapping and planning of livelihood activities. The Project Director is granted authority to approve necessary plans and expedite engagement with ERADA, enhancing rural resilience in vulnerable sub-project areas.
- The EC has approved the proposal to include representation from local PRIs in KVA. Presidents and Ward members of relevant Gram Panchayats may be nominated as Patron and permanent members, without voting rights, except if they are beneficiaries within the sub-project area.
- The EC has approved the proposal for hiring of experts having experience of working with the JICA TCP (Phase- I & II) Experts.
- The EC has approved the proposal for the linkage of SHGs (Phase-I & II) with SWAN Women Federation in accordance with the BTOR issued by the JICA Review Mission. Funding of approximately ₹16.10 lakh for this initiative will be sourced from the Society Fund of HPADS through accrued interests.

- The EC has approved the allocation of funds, ₹2.60 Crore for the development of three DOA Seed Farms (Bairtee, Karsog & Bhattoo) and ₹3.00 Crore for infrastructure upgrading at SAMETI (Mashobra). Execution of these works will be facilitated by HPCDP (Phase-II) through respective DPMUs & BPMUs, with operation and maintenance managed by DOA & SAMETI themselves, as discussed with the worthy Secretary (Agr.)- cum- Chairman, EC, HPADS & Director of Agriculture, H.P.
- The EC has granted approval for the pilot initiative of separate tendering of civil works and conveyance systems in at least 25 LIS & TWIS on pilot basis, in line with the recommendation from the JICA review mission and the learning from Phase-I of HPCDP.
- The EC has approved the constitution of State Level and District Level Coordination Committees for the implementation of approved convergence activities.
- The EC has granted 'in principle' approval for the utilization of the corpus fund worth ₹10.70 Crores, to be managed by the PMU in the form of Fixed Deposit Receipts (FDRs), with interest accrued supporting FPOs, as per Point No. 114 & 115 of MoD. Detailed operation and maintenance design of the corpus funds will be developed by the PMC, with utilization subject to prior consent from JICA and the EC. The proposal will be reviewed by JICA's management for further action.
- EC approved funds for interlink chain fencing, retaining wall construction, and procurement of customized PP Bags for Shiitake block production at SCTC, Palampur. Additionally, funds were sanctioned for constructing an Incubation Room and establishing a Spawn Laboratory, totalling approximately ₹46 lakh rupees, with an additional ₹56 lakh rupees approved for additional SCTC facilities. The Chairman recommended expanding Shiitake cultivation training state wide and exploring online selling platforms for Shiitake mushrooms, given their selling price ranging from ₹1100/- to ₹1500/- per kg.



9.6.2 5th Meeting of Executive Committee (EC):

5th Executive Committee meeting was held on 11th January, 2024 under the Chairmanship of Worthy Secretary (Agriculture), Dr. C. Paulrasu, IAS to the Govt. of Himachal Pradesh-cum- Chairman Executive Committee of the HPADS at HP Secretariat, Shimla. In this meeting the status of preparedness as well as pace of ongoing

- Approved proposal for planning and execution of training programs and designing of sub-project specific modules within approved cost norms to save time and financial resources.

- The proposal for the nomination of farmers for Shiitake Mushroom Cultivation training at SCTC Palampur and selection criteria outlined in the MoD vide Point No. (3) of 111, including(A) The farmer shall possess basic knowledge of mushroom cultivation and preferably be a mushroom grower. (B) Willing to undertake Shiitake Mushroom Cultivation Training in SCTC, (C) Ready to give farmer share (cost) of the production material. (D) Shall be willing to market the produce at his own was discussed and the Executive Committee approved the proposal to nominate interested farmers who fulfill condition B, C, D and the basic knowledge of Mushroom Cultivation shall be imparted to the nominated farmers while undergoing comprehensive training programme.
- Approved proposal for purchasing IT equipment to establish video conferencing and digital training facilities at PMUs.
- Approved inclusion of Goat Farming & Sheep Rearing activities under the Livelihood Support Component and addressed concerns regarding high poultry mortality rates, further justifying the proposal for Goat Farming & Sheep Rearing activities.
- EC approved the proposal for powers for execution of different approved activities were delegated in favour of PMUs upto BPMUs level for smooth and timely implementation of different activities.
- The Executive Committee approved the proposal to undertake the Technical Intern Training Programme (TITP)/ Specified Skilled Worker (SSW) programme through Himachal Pradesh Kaushal Vikas Nigam (HPKVN), recognizing its potential to expose young farmers/ agripreneurs to advanced agricultural practices and modern technologies in Japan, fostering knowledge and skill enhancement for employment generation.
- Proposal for promotion of Galgal and Harad plantation in five clusters each in BPMU, Hamirpur, Bilaspur, Una, Sarkaghat, and Dehra, involving approximately 1000 farming families was approved by the EC. This initiative aims to procure and plant 15,000 Galgal and 5000 Harad plants across approximately 70 hectares in the upcoming rainy season of 2024.
- Proposal for collaboration between HPCDP Phase-II and Matsuda Sangyo Private Limited (Japanese Trading Company) has been approved by the EC. The Japanese Trading Company intends to introduce IQF technology for preservation and export of high-quality vegetables specially Broccoli and also the company interested in investing for creation of frozen food factory in the state of H.P.



9.7 Joint Visit by JICA-Sri Lanka & JICA-India under DPMU Palampur and Mandi, HPCDP (Phase-II), JICA-ODA, Hamirpur

Ms. Yasuko Nakajima, Gender Expert, JICA-Sri Lanka alongwith Ms. Nishtha Vengurlekar, Development Specialist, JICA-India in the gracious presence of Project Director, Dr. Sunil Chauhan paid visits to the District Project Management Unit (DPMU) in Palampur & Mandi under HPCDP (Phase-II), JICA-ODA on 13th & 14th, December 2023, respectively.

During these visits, the dignitaries interacted with the Self-Help Groups (SHGs) and Farmer Producer Organizations (FPOs) and took keen interest in the exhibition of products by these groups. The dignitaries also expressed admiration for the dedicated efforts of DPMU Palampur & Mandi and extended appreciation and encouragement to the Self-Help Groups for their excellent work. More than 100 farmers along with SPMU and DPMU staff graced the event with their presence.



Brief description of the subproject FIS Rani Kuhal by BPM Palampur



Interaction with SHGs, district Kangra showcasing their products



Welcome of dignitaries by DPMU Mandi in the presence of Project Director



Interaction with SHGs, district Mandi showcasing their products

9.8 PoC- Proof of Concept

The collaboration between the Himachal Pradesh Crop Diversification Promotion Project (HPCDP) and the Japan International Cooperation Agency (JICA) has led to the initiation of a Proof of Concept (PoC) project titled "Digital Solutions in Agriculture in Himachal Pradesh". This project, spearheaded by JICA's DX Lab in India, aims to leverage digital technology to enhance farmers' income and streamline agricultural practices.

Project Overview:

Objectives:

1. To Deploy scalable solutions for farmer's income enhancement
2. Downstream initiative to introduce a digital platform for market linkages
3. To broaden market reach & streamline supply chain

Funding:

USD 150,000 allocated by JICA's DX Lab.

Executing Partner:

JICA's DX Lab Team (Boston Consultancy Group, India) Collaboration with PMU, HPCDP (Phase-II), JICA-ODA and Digital Partner (DeHaat).

Duration:

12-month pilot project from January 2024 to December 2024.

Geographical Focus:

Solan, Kangra, Mandi, Kullu, and Bilaspur districts.

Key Components:

Agri Digital Marketplace:

Development of a comprehensive digital platform to facilitate market linkages and streamline the supply chain.

Target Crops:

Tomato, Peas and Capsicum.

GoHP Agencies Involvement:

The State Department of Agriculture, State Department of Horticulture and HP State Agriculture Marketing Board actively participating in planning and execution.

Farmer Engagement Model:

Targeting 1500-2000 farmers, focusing on retail customers, processing, and export markets. Establishment of collection centres, logistics and storage solutions.

Project Launch:

The project was launched on 12th February, 2024, in the presence of Worthy Director of Agriculture, Smt. Kumud Singh, IAS, Project Director Dr. Sunil Chauhan, JICA Experts and Digital Partner (DeHaat).

Status of work:

The Project is operating in the different districts/ clusters such as Solan, Mandi and Bilaspur (Kahali) and has made substantial progress since its initiation. During the FY 2023-24, 4 nos. of clusters namely Kandaghat, Berti, Saproon, Top ki Ber under Solan District and Jahnjheli, Balh, Gohar, Thunag) under Mandi district have been actively engaged through group meetings and individual discussions. Notably, approximately more than 1100 on boarding surveys and more than 220 detailed baseline surveys have been completed, providing valuable insights into the current agricultural landscape. Additionally, more than 400 DeHaat Farmer Applications have been downloaded by farmers. Work is underway to finalize the business model, priority districts and crops in collaboration with potential stakeholders, including DeHaat and the HPCDP Team.



9.9 Technical Intern Training Programme (TITP)/ Specified Skilled Worker (SSW) in Phase-II of HPCDP

- The MoD activity 2.2.8 "Programme for Next Generation" with an outlay of ₹3.00 Crores for the youth from Phase-II sub-projects. TITP/SSW programme as this programme aims at exposing young farmers/agripreneurs to the advanced agricultural practices, modern technologies, innovative interventions, fostering knowledge & skill enhancement in Japan thereby leading to employment generation.
- The JICA, India has concurred to add TITP/SSW program as one of the additional constituents to said activity. The Project proposes to undertake execution of the TITP/SSW through the Himachal Pradesh Kaushal Vikas Nigam (HPKVN) by defining due term of reference in this regard and signing of MoU.
- Furthermore, the process of procuring Sending/Supervising Organizations is a collaborative effort between the HPCDP and HPKVN.
- In the 5th Executive Committee meeting, the proposal to undertake the TITP/SSW programme through HPKVN was approved.
- The Managing Director, HPKVN have constituted an eight-member committee for the following purpose:
 1. Preparation and finalization of Terms of Reference (TOR).
 2. Preparation/framing and finalization of Request for Proposal (RFP) document.
 3. Evaluation of bid/proposals for short listing and selection of "Sending Organization".
 4. Framing a draft Memorandum of Understanding (MoU) to be signed with the selected firms.
- Dr. Ravinder Chauhan, DPD (MPH), has been nominated as the representative from the HPCDP (Phase-II), JICA-ODA.

9.10 Meeting Highlights & Achievements, 2023-2024

9.10.1 Review Meetings Summary:

Under the chairmanship of Project Director, Dr. Sunil Chauhan, HPCDP (Phase-II), JICA-ODA, a series of monthly review meetings were held at the SPMU meeting hall, Hamirpur throughout the FY 2023-24. These meetings served as crucial forums for evaluating the project's progress. Attendees, including DPMs, BPMs, Egis team and CTL-PMC, delivered detailed presentations, providing insights into the current status of DPRs, ongoing construction activities and extension activities.

The agenda encompassed various important topics, including the allocation and expenditure of funds for the financial year, targets and achievements for specific months, expenditure plans and the selection of sub-projects. Additionally, discussions covered aspects such as cost norms, status of DPRs and tendering, works under execution for each sub-project, infrastructure development targets, catchment area treatment targets and the formation and registration status of Kisan Vikas Associations (KVAs). Updates on online baseline surveys, Subproject Development Plan (SDP) preparation, DPRs and works at Department of Agriculture (DoA) farms, progress reports of the SCTC, Palampur, model sub-project sites, functional satellite offices, staff positions and the current status of collection centres were also discussed. These meetings facilitated comprehensive discussions and strategic planning to ensure the effective implementation and success of the project.

9.10.2 Meetings regarding SDP Formation:

The organization of SDP meetings in the FY 2023-2024 was a pivotal initiative aimed at equipping the project's extension staff with the essential tools and insights required for the preparation of the Subproject Development Plan (SDP). Five numbers of meetings were held for this purpose. These meetings served as platforms where project personnel engaged in comprehensive discussions, knowledge exchange and capacity-building exercises. Through these sessions, the extension staff received thorough training on the application of Participatory Rural Appraisal (PRA) methodologies, ensuring a deep understanding of community dynamics and effective needs assessment processes. Furthermore, the SDP meetings facilitated seamless collaboration and coordination among team members, ensuring that interventions were precisely aligned with the identified priorities and objectives of the targeted subprojects. By empowering extension staff with the necessary skills and knowledge, these meetings significantly enhanced the project's capacity to design and implement sustainable development initiatives that resonate authentically with the communities they serve.

9.10.3 Review meetings in JICA India Office, New Delhi:

- **A review meeting was held on 2nd August, 2023**, to discuss various aspects of the Himachal Pradesh Crop Diversification Promotion Project. The meeting agenda included an introductory presentation outlining the concept, scope and institutional arrangements for HPCDP-II. Additionally, there was a presentation on the current progress of HPCDP-II, highlighting key issues and discussion points with the JICA. The PMC also delivered a presentation on the project plan and its progress. Furthermore, insights were shared on the previous phase of the project, HPCDP-I and TCP. The meeting concluded with the screening of a video or documentary showcasing the project's activities and impact.
- **A review meeting was held on 22nd January, 2024**, to review the status of the HPCDP (Phase-II) project along with discussion on proposed activities such as utilization of corpus fund and plan for implementation of TITP. Dr. Sunil Chauhan, Project Director of HPCDP (Phase-II), JICA -ODA, provided a detailed overview of the progress achieved in various project activities and highlighted ongoing innovative interventions.

9.10.4 Online Weekly Review Meetings:

Throughout the FY 2023-24, under the Chairmanship of Dr. Sunil Chauhan, Project Director, HPCDP (Phase-II), JICA-ODA, a series of Online Weekly Review Meetings were conducted. These meetings, involving each BPMU, aimed at closely examining project progress and addressing key implementation challenges. These meetings served as a platform for meticulous project oversight and strategic decision-making to ensure the efficient advancement of project objectives.

9.10.5 Meeting at H.P. Secretariat:

Dr. Sunil Chauhan, Project Director, attended various meetings at the H.P. Secretariat with the Secretary Agriculture to the Government of Himachal Pradesh to discuss project progress.

9.10.6 Review meeting with IEC Committee members :-

Online meeting on the ongoing IEC activities held on 31st January, 2024 under the Chairmanship of Sh. Rajeshwar Thakur, Media Advisor, HPCDP (Phase-II), JICA-ODA in the meeting hall, SPMU, Hamirpur and the meeting was attended by members of the IEC committee at DPMUs level. The meeting focused on key aspects including the follow-up status of social media pages, advance information dissemination for special events, submission of high-quality visual content, updates on street plays and pre-project videography, as well as the status of daily work reports and newspaper clippings. The discussions aimed to ensure synchronized efforts and effective communication strategies for the ongoing IEC initiatives across project areas.

9.10.7 Review meeting with Egis and PMC team:

The review meetings with the Egis and PMC teams have been instrumental in offering valuable insights into several critical aspects of the project. These include the current status of Detailed Project Reports (DPRs), status of tendering processes, award works, ongoing construction activities, extension activities etc.

Summary of meetings :-

S.N.	Particulars	Date
1	Review meetings in JICA India Office, New Delhi	02.08.2023
2		22.11.2024
3	Meeting with Worthy Secretary(Agriculture) to the Government of Himachal Pradesh	06.04.2023
4		21.04.2023
5		01.05.2023
6		03.05.2023
7		17.05.2023
8		19.05.2023
9		07.10.2023
10		09.11.2023
11		27.12.2023
12		04.01.2024
13	Monthly Review Meeting	07-04-2023
14		02-05-2023
15		09-05-2023
16		10-05-2023
17		12-06-2023
18		07-08-2023
19		10-10-2023
20		08-11-2023
21		28-11-2023
22		16-12-2023
23		16-01-2024

24	Meeting on microplanning for the formulation of SDP	15-02-2024
25		14-03-2024
26		11-04-2023
27		12-04-2023
28		29-09-2023
29		03-10-2023
30		18-11-2023
31		22-02-2024
32	Online Weekly Review Meeting with BPMU Sarkaghat	17.06.2023
33	Online Weekly Review Meeting with BPMU Rampur	24.06.2023
34	Online Weekly Review Meeting with BPMU Chamba	07.07.2023
35	Online Weekly Review Meeting with BPMU Una	15.07.2023
36	Online Weekly Review Meeting with BPMU Nahan	15.07.2023
37	Online Weekly Review Meeting with BPMU Palampur	22.07.2023
38	Online Weekly Review Meeting with BPMU Kullu	22.07.2023
39	Online Weekly Review Meeting with BPMU Mandi	26.08.2023
40	Online Weekly Review Meeting with BPMU Kangra	02.09.2023
41	Online Weekly Review Meeting with BPMU Palampur	23.09.2023
42	Online Weekly Review Meeting with BPMU Una	30.09.2023
43	Online Review Meeting with DPMs and BPMs	16.10.2023
44	Online Weekly Review Meeting with BPMU Solan	27.10.2023
45	Online Weekly Review Meeting with BPMU Hamirpur	04.11.2023
46	Review meeting with DPMU Mandi	23.03.2024
47	Review meetings with PMC	05.04.2023
48		23.05.2023
49		05.08.2023
50		18.09.2023
51		25.09.2023
52		30.10.2023
53		20.11.2023
54	Review meeting and discussion to achieve the target for preparation of DPRs along with Egis India	30.05.2023
55		12.06.2023
56		13.07.2023
57		06.09.2023
58		12.09.2023
59		19.09.2023
60		22.09.2023
61		26.09.2023
62		03.10.2023
63		22.10.2023
64		15.03.2024



Monthly Review Meeting on dated 16.01.2024 at SPMU meeting Hall, Hamirpur



Monthly Review Meeting on dated 15.02.2024 at SPMU meeting Hall, Hamirpur



Workshop organized for marketing officers on dated 07.02.2024 at SPMU meeting Hall, Hamirpur



Review meeting with IEC Committee members on dated 31.01.2024



Review meetings in JICA India Office, New Delhi on dated 22.01.2024



Review meetings at DDA Hall, Mandi on dated 23.03.2024

9.11 Appointment of Mr. Rajeshwar Thakur as Media Advisor to Enhance Project Communication and Outreach

On 1st December, 2023, Mr. Rajeshwar Thakur was appointed as Media Advisor, entrusted with enhancing the project's communication and outreach strategies.

Roles & Responsibilities:

1. Support to develop IEC/Knowledge management strategies.
2. Develop reports and publication for the implementation of project activities.
3. Support project to prepare media plan and its analysis
4. Design and assist in advertisement and out-reach campaign.
5. Provide inputs in documentation and dissemination of best practices.
6. Ensuring timely release of advertisements of press releases.
7. Should establish coordination with media for covering of different project related events.
8. Capacity building of DoA/PMU staff related to subject matter of project implementation plan.

9.11 Appointment of Mr. Baljeet Singh as Senior Consultant

On 4th March, 2024, Mr. Baljeet Singh was appointed as Senior Consultant, entrusted with pivotal responsibilities aimed at advancing agricultural practices and empowering farmers.

Roles & Responsibilities:

1. Support in designing and strengthening Farmer to Farmer extension of crop production technologies.
2. Support for establishment of the FPO by motivating farmers to organize into KVA cum Farmer Interest Group and clusters.
3. Necessary guidance for agricultural extension activities during project implementation.
4. Necessary guidance for conduct post-harvest handling and value addition to the agriculture produce to FPO.
5. Support for the planning and implementation of business trials between FPO and Agribusiness companies.
6. Support to formulate supply chain plan for development of coordination mechanism among stakeholder in supply chain.
7. Support in designing various training programmes for the farmers to provide practical training s with latest techniques.

9.13 Audit Reports

9.13.1 Audit Report 2021-2022

S. N.	Year	Para No.	Description	Status
1	2021-2022	1	Non achievement of financial targets resulting in backlog ₹46.28 lakh	
		2	Non utilization of accrued interest amounting to ₹13.64 crore	
		3	Maintaining of multiple bank accounts and keeping funds in private banks ₹47.23 lakh	
		4	Under favour to vendor for hiring of vehicle ₹3.05 lakh	

S. N.	Year	Para No.	Description	Status
1	2021-2022	5	Irregular reimbursement of cost of inadmissible medicines /lab test ₹0.05 lakh	
		6	Non preparation of balance sheet	
		7	Non conducting of Physical verification of the stock and stores-Phase-II	
		8	Non conducting of Physical verification of the stock and stores of DPMU & BPMU, Mandi- Phase-II	

9.13.2 Audit Report 2022-2023

S. N.	Year	Para No.	Description	Status
1	2021-2022	OBS-837659	Release of funds to defunct FPC without entering into any agreement resulted in loss of public money ₹53.38 lakh and non-utilization of collection centre cum flour mill resulted in unfruitful expenditure ₹203.74 lakh	Reply Submitted
		OBS-837058	Non-achievement of financial targets resulting in backlog ₹69.11 crore	Reply Submitted
		OBS-836004	Non-utilization of accrued interest amounting to ₹13.76 crore	Reply Submitted
		OBS-837040	Unauthorized delay in completion of any of the sub-project due to selection of non-feasible sub-projects resulting in further delay in completion of other components of the project allotted to the district unit ₹221.00 crore	Reply Submitted
		OBS-835957	Slow pace of completion of execution work of construction of training centre at Salogra ₹2.00 crore	Reply Submitted
		OBS-837033	Non-inclusion of clause in the agreement for interest earned on advance payment released to the executing agencies resulted in loss of ₹31.50 lakh	Reply Submitted
		OBS-837056	Selection of participants for international exposure visit cum training to Japan who could not render their services with the activities of project till the completion of project due to retirement/posted outside the state resulted in unfruitful expenditure ₹20.66 lakh	Reply Submitted
		OBS-837068	Non-disposal of unserviceable items ₹9.36 lakh	Reply Submitted
		OBS-836033	Inadmissible expenditure incurred during departmental meetings and departmental ceremony ₹5.90 lakh	Reply Submitted
		OBS-837053	Non finalization norms of incurring expenditure for organizing periodical review meetings, workshop etc. under Institutional Development Components ₹2.88 lakh	Reply Submitted
		OBS-837050	Inadmissible expenditure incurred from eligible portion of project for conducting farmer fair cum inauguration of FTC, Bangana and foundation of three sub projects ₹2.00 lakh	Reply Submitted

		OBS-837062	Organization of an awareness camp of non-feasible sub-projects resulted in unfruitful expenditure of ₹0.37 lakh	Reply Submitted
		OBS-837064	Expenditure of purchase of Kent Water Filter (Water Purifier) charged from eligible portion instead of non-eligible portion of the project ₹0.28 lakh	Reply Submitted
		OBS-837041	Non-conducting awareness camp under the farmers' support component in accordance with the unit cost norms resultantly excess expenditure incurred ₹0.24 lakh	Reply Submitted
		OBS-835908	Non-Preparation of Balance Sheet	Reply Submitted
		OBS-837069	Non-conducting of physical verification of stores and stocks	Reply Submitted



9.14 Media Coverage of Project Activities

JICA to help farmers sell produce online

HAMIRPUR, FEBRUARY 14

The government has announced that the Japan International Cooperation Agency (JICA) will help the state's farmers sell their produce through e-commerce.

Himachal Director of Agriculture Kumud Singh, while addressing a meeting of stakeholders here, said that this would not only help the farmers get the best prices for their produce, but also help them set the price.

Starting from Hamirpur district, the JICA has been working on Himachal Pradesh Crop Diversification Project (HPCDP) for a decade and has helped many farmers in improving their economic position in that area. The JICA is now supporting farmers in Una, Bilaspur, Kangra and Mandi districts.

Kumud Singh said that JICA had collaborated with an e-commerce digital platform, DeHaat, to help farmers in all ways, including

procurement of seed, improving produce quality and selling it. He added that DeHaat was a start-up in the agri-tech sector and one of the companies providing end-to-end solutions and services to farmers in India.

Dr Sunil Chauhan said that the project to use an e-commerce platform for helping farmers was approved by the JICA headquarters in Tokyo. He added that the JICA had approved over Rs 1.5 crore for the project.

He said that DeHaat was operating in 12 states and had an extensive network of over 11,000 DeHaat centres.

Rajeshwar Thakur, media adviser of the JICA, said that farmers in the state did not get the best prices for their produce such as potato, broccoli, cauliflower, peas, apple, guava, mango, etc.

He said that farmers would get better prices by selling their products through the online mode. — OC

बाजार की मांग के हिसाब से सब्जियों की पैदावार करेंगे किसान



■ जाइका ओडीए टीम ने माकड़ी का दौरा कर व्यापारिक खेती के बारे में की चर्चा

हिमाचल टैटलक ब्यूरो ■ बिलासपुर

बिलासपुर में हिमाचल प्रदेश फसल विविधिकरण प्रोत्साहन परियोजना चरण दो जाइका ओडीए के शेष कार्यक्रम के तहत प्रशिक्षण समन्वयक टाकोहीरो टाकागाकी एवं राष्ट्रीय सलाहकार डॉ. उमेश बाबू ने माकड़ी गांव का दौरा किया तथा लाभार्थी किसानों से व्यापारिक खेती के बारे में चर्चा की, जिससे किसानों की आर्थिकी मजबूत हो सके।

इस टीम में जिला परियोजना प्रबंधक हमीरपुर डॉ. अनुप कतना, कृषि विकास अधिकारी विवेक शर्मा व मार्केटिंग अधिकारी रवि कटोच शामिल रहे। इस अवसर पर खंड परियोजना प्रबंधक डॉ. देवेन्द्र संख्यान, कृषि विशेषज्ञ डॉ. विक्रम सिंह, कृषि विशेषज्ञ अमित शर्मा व कौशिक ठाकुर ने बिलासपुर जिले में चल रही गतिविधियों के बारे में चर्चा की तथा

शेष कार्यक्रम से संबंधित जानकारी साझा की। खंड परियोजना प्रबंधक डॉ. देवेन्द्र संख्यान ने बताया कि शेष कार्यक्रम का मुख्य उद्देश्य किसानों को व्यापारिक फसलों अथवा सब्जियों की पैदावार के प्रति प्रोत्साहित करना है।

इस परियोजना के तहत अब लाभार्थी लघु व सीमांत किसान बाजार की मांग के हिसाब से अग्रेजी सब्जियों का उत्पादन करेंगे जो मौसमी सब्जियों से पहले तैयार हो सकें, जिससे किसानों को अधिक लाभ मिल सके। डॉ. संख्यान ने बताया कि इसके अलावा किसान स्वयं बाजार का सर्वे भी करेंगे। उन्हें इस बारे में प्रशिक्षित किया गया। इस दौरान प्रशिक्षण समन्वयक टाकोहीरो टाकागाकी एवं राष्ट्रीय सलाहकार डॉ. उमेश बाबू ने किसानों द्वारा किए गए सर्वे में शामिल जुखला के सब्जी विक्रेताओं से भी बातचीत व चर्चा की।

शिटाके मशरूम को पहचान दिलाने के लिए उठाए जाएंगे कारगर कदम: कुमुद

निशा/देवभूमि मिरर

धर्मशाला। कृषि निदेशक कुमुद सिंह ने कहा कि शिटाके मशरूम के उत्पादन में बढ़ोतरी करने के लिए कारगर कदम उठाए जाएंगे। क्षेत्रीय मेलों प्रदर्शनियों, शीतकालीन ग्रीष्मकालीन उत्सवों के माध्यम से शिटाके मशरूम को पहचान दिलाई जाएगी इसके साथ ही इसे लोकप्रिय बनाने के संबंध में पर्यटन विभाग के अधिकारियों के साथ बैठकें करने का भी निर्देश दिए गए ताकि होटल कारोबारियों द्वारा अपने व्यंजनों में शिटाके को शामिल करने से शिटाके मशरूम का उपयोग कृषक समुदाय के लिए शिटाके के विपणन को बढ़ाने में मदद करेगा। शुक्रवार को कृषि



निदेशक, कुमुद सिंह, भा0 प्र0 से0 ने जाइका समर्थित हि0 प्र0 फसल विविधिकरण प्रोत्साहन परियोजना के अंतर्गत स्थापित शिटाके मशरूम उत्पादन प्रशिक्षण केंद्र, पालमपुर का निरीक्षण किया तथा शिटाके मशरूम व इस केंद्र द्वारा किये जा रहे विभिन्न कार्यों की जानकारी ली। शिटाके

विशेषज्ञ डॉ. सपन ठाकुर एवं डॉ. नागेन्द्र नाग ने निदेशक (कृषि), को इस बारे में विस्तृत जानकारी दी। शिटाके एक नया मशरूम है और प्रदेश के किसान इसे अपनाकर अपनी आर्थिकी मजबूत कर सकेंगे। कृषि निदेशक ने शिटाके मशरूम प्रशिक्षण केंद्र द्वारा किये जा रहे

सुधासली

जाइका डेलीगेशन ने किया सिरमौर के गांवों का दौरा, कार्यक्रम के तहत किसानों से भी की चर्चा

शैप कार्यक्रम करेगा किसानों की आर्थिकी मजबूत

कार्यालय संवाददाता-नाहन

जिला सिरमौर के किसान अब अपनी फसल उत्पादन को बाजारी मांग के अनुसार उत्पादित कर पाएंगे, ताकि जिला के छोटे-ले व सीमांत किसानों को उत्पादन का समुचित लाभ प्राप्त हो सके, हिमाचल प्रदेश फसल विविधीकरण प्रोत्साहन परियोजना के तहत चरण के तहत किसानों को इसके लिए नए दृष्टिकोण से प्रशिक्षित भी किया जा रहा है, जापान द्वारा वित्तपोषित जायका परियोजना के तहत जिला सिरमौर में स्मॉल होल्डर कल्चर, इन्फरमेटेड एंड प्रग्रेसिव रूरल शैप कार्यक्रम के तहत जिला सिरमौर में जापान के शैप कार्यक्रम के प्रशिक्षण समन्वयक तत्कालीन तत्कालीन व



राष्ट्रीय सलाहकार डॉ. उमेश बाबू ने खंड परियोजना प्रबंधन ईकाई नाहन का इसी मकसद से दौरा किया। जापका द्वारा संचालित जिला सिरमौर के 16 स्थानों पर प्रोजेक्ट के कार्यों को भी इस दौरान कृषि विरोध अधिकारियों के साथ

दौरा कर परखा गया। वहीं जिला खंड परियोजना प्रबंधन ईकाई नाहन के तहत उपपरियोजना जोक से रजौली पनवेदा व ग्राम पंचायत ने हरमनाह का भी निजिकल दौरा कर वहां के किसानों से शैप कार्यक्रम की चर्चा की गई। वहीं

कार्यक्रम की अमली योजनाओं पर भी किसानों की अवगत करवाया गया। इस दौरान दौर के दौरान जिला परियोजना प्रबंधक डा. संतोष कुमार गुप्ता, खंड परियोजना प्रबंधक अरुण रामा, कृषि अधिकारी डा. अनिल कुमार

जसवाल, व मैकिंटिश अधिकारी निपल के अलावा खंड परियोजना प्रबंधन नाहन ईकाई की विस्तार अधिकारी हिमानी, निनय व पालनिका से भी जापानी डेलीगेशन ने फीडबैक ली।

खंड प्रबंधन ईकाई विस्तार अधिकारी कृषि हिमानी ने बताया कि शैप ईडिया कार्यक्रम के तहत गांव के किसानों ने टीम के साथ नकदी फसलों के उत्पादन व इसमें जुड़े बाजार उपमुखी दृष्टिकोण के बारे में चर्चा कर आगामी कार्यक्रम योजना को तय किया गया है। कुल मिलाकर शैप कार्यक्रम जिला सिरमौर के किसानों को बाजारी मांग के अनुसार फसलों को उत्पादित कर आर्थिकी को सुदृढ़ कर अल्प में रोगमुक्त प्रगति करेगा।

दिव्य हिमाचल Mon, 29 January 2024
https://epaper.divyahimachal.com/c/74446730



15 दिसंबर 2023

आवाज हिमाचल

साहस सच का

हिमाचल फसल विविधकरण प्रोत्साहन स्वयं सहायता समूहों की कार्यप्रणाली अब श्रीलंका भी अपनाएगी

आवाज हिमाचल। सुंदरनगर

हिमाचल फसल विविधकरण प्रोत्साहन परियोजना के प्रथम चरण में हिमाचल के अलग अलग हिस्सों में विकसित किये गये स्वयं सहायता समूहों की कार्यप्रणाली को अब श्रीलंका भी अपनाएगा। विभिन्न प्रकार के उत्पाद बनाकर अपने जीवन की आर्थिकी को सुदृढ़ कर चुकी इन स्वयं सहायता समूहों की महिलाओं से पिछले दो दिनों से जाइका इंडिया की प्रोजेक्ट डेवलपमेंट स्पेशलिस्ट निष्ठा वेंगुरलकर के साथ जाइका श्रीलंका की जेंडर स्पेशलिस्ट यशिको नकाजिमा ने बातचीत की। दोनों ने स्वयं सहायता समूहों के कामकाज के तौर तरीकों को बारीकी से जाना और इस अध्ययन के आधार पर आने वाले समय में इसे श्रीलंका में महिलाओं के आर्थिक उत्थान के लिये लागू किया जाएगा।

सुंदरनगर में प्रेस कॉन्फ्रेंस को संबोधित करते हुए परियोजना निदेशक डॉ. सुनील चौहान और राज्य सरकार के परियोजना में मीडिया सलाहकार राजेश्वर ठाकुर ने बताया कि प्रथम चरण में हिमाचल के अलग अलग हिस्सों में काफी संख्या में सिंचाई योजनाएं स्थापित की गई थी। इस दौरान महिला सशक्तिकरण के क्रम में कई स्वयं सहायता समूहों की भी स्थापना की गई थी। इन्होंने अपनी आजीविका को बेहतर करने



के लिए परियोजना की ओर से उस दौरान दी गयी आर्थिक सहायता और प्रशिक्षण पर अमल करते हुए विभिन्न प्रकार के खाद्य उत्पाद और दैनिक जरूरत की चीजों को बनाना शुरू किया। अब इन्हें अच्छा खासा बाजार मिल गया है। जिससे ये महिलाएं अपना काम जीवन स्तर ऊंचा करने में कामयाब हुई हैं। अब इसी मॉडल को जाइका श्रीलंका में अमल कराने की योजना पर आगे बढ़ेगा।

दोनों ने बताया कि सुंदरनगर के पास तकवाड़ में आज आयोजित किये गए कार्यक्रम में भी मंडी जिले के समूहों ने हिस्सा लिया। कार्यक्रम में नाटी का भी आयोजन महिलाओं ने किया। अच्छा काम कर रहे महिला समूहों को मंच पर

पुरस्कार भी प्रदान किये गए। जाइका के विशेषज्ञों ने स्थानीय इलाके में जाइका के पहले चरण में विकसित किये गये विविध खेती के फार्म में जाकर भी उपलब्धियों का जमीनी जायजा लिया। इस मौके पर विविध खेती में टमाटर उगाकर सालाना 12 लाख रुपये की आमदनी लेने वाले युवक को भी जाइका विशेषज्ञों ने शाबाशी दी। इससे पहले कांगड़ा जिले के पालमपुर डीपीएमयू का भी ऐसा ही दौरा किया गया। कार्यक्रम में मंडी डीपीएम बलबीर ठाकुर, डीपीडी डॉक्टर रविन्द्र चौहान, डॉ. योगेंद्र कौशल, सुंदरनगर डीपीएम पवन कुमार नायक समेत इलाके प्रबुद्ध किसान वर्ग भी मौजूद था।



तैयारी

जापानी कंपनी मतसुदा ने हिमाचली उत्पादों की खरीद पर जताई सहमति

जापानी बाजार में चीन का विकल्प बनेंगी हिमाचल की फल-सब्जियां

कमलेश रतन भारद्वाज

हमौरपुर। हिमाचल प्रदेश की फल सब्जियां जापान के बाजारों में चीन का विकल्प बनेंगी। जापान सरकार के सहयोग से हिमाचल में संचालित जाइका प्रोजेक्ट-2 के तहत जल्द ही हिमाचल के किसानों और बागवानी के उत्पाद बेहतर कीमतों पर जापान के बाजारों में बिकेंगे।

हिमाचल प्रदेश फसल विविधिकरण परियोजना (जाइका-2) के तहत यह विदेशी बाजार का विकल्प प्रदेश के किसानों और बागवानी को मिलेगा। परियोजना के तहत हिमाचल में जापान सरकार के सहयोग से संचालित हिमाचल फसल विविधिकरण परियोजना

पहले चरण में ब्रोकली और इसके बाद केवीए के किसानों से खरीदेंगे तमाम फल-सब्जियां

(जाइका-2) में इस बार किसानों के उत्पादों के बाजार उपलब्ध करवाने के लिए यह बड़ी पहल की गई है। हिमाचल प्रदेश फसल विविधिकरण परियोजना प्रबंधन से जापान की मतसुदा कंपनी ने संपर्क कर बेहतर दामों पर सब्जियों और फलों की मांग रखी है।

इस सिलसिले में मतसुदा कंपनी के प्रबंधक निदेशक टांकी ने हिमाचल प्रदेश फसल विविधिकरण परियोजना के निदेशक डॉ. सुनील चौहान से मुलाकात की है। प्रथम चरण में प्रदेश के कुल्लू जिले में पैदा होने वाली ब्रोकली को जापान

के बाजारों में उतारने के लिए दोनों अधिकारियों ने कुल्लू का दौरा भी किया है। कंपनी के एमडी टांकी ने अपनी टीम और परियोजना प्रबंधन के अधिकारियों के साथ कुल्लू में सबसे पहले ब्रोकली के उत्पादन की संभावनाओं और वर्तमान स्थिति पर समीक्षा की है।

फसल विविधिकरण परियोजना (एचपीसीडीपी) कुल्लू स्थित ब्लॉक प्रोजेक्ट मैनेजमेंट यूनिट (बीपीएमयू) के तहत संचालित शरेडी और चरेडा नामक सिंचाई योजनाओं से ब्रोकली के उत्पादन पर कंपनी और परियोजना अधिकारियों ने दौर के दौरान चर्चा की है। इस दौर के बाद मतसुदा कंपनी ने प्रथम चरण में ब्रोकली की खरीद पर सहमति जताई है। संवाद

कंपनी का एचपीसीडीपी से अनुबंध करवाएगी मतसुदा : चौहान हिमाचल प्रदेश फसल विविधिकरण परियोजना (एचपीसीडीपी) के निदेशक सुनील चौहान ने कहा कि जापानी कंपनी मतसुदा ने ड्राइविंग अल विक्क फ्रॉजिंग सिस्टम तकनीक के इस्तेमाल के लिए भी बहुराष्ट्रीय कंपनी के साथ एचपीसीडीपी का अनुबंध करवाने के लिए हमी भरी है। कंपनी के अधिकारियों के साथ प्रथम चरण में कुल्लू का दौरा किया गया है। यहाँ पर ब्रोकली के उत्पादन के संभावनाओं को परख कर कंपनी ने खरीद के लिए हमी भरी है।

ऐसे उपलब्ध होगा बाजार, इतने किसान जुड़ेंगे

जाइका प्रोजेक्ट-2 के तहत एचपीसीडीपी 1012 कहेड़ की लगत से प्रदेश में



मैनेजमेंट यूनिट स्थापित किए गए हैं। परियोजना के तहत ही ग्रामीण क्षेत्रों में कृषि विकास संघ (केवीए) गठित की गई हैं। इन केवीए से भविष्य में कंपनी सीधा संपर्क कर उत्पाद खरीदेगी।

किसानों की आर्थिकी सुदृढ़ करने के लिए बनाई गई योजना को मिली मंजूरी



किसानों के साथ बैठक दौरान अधिकारी।

सवेरा न्यूज/जसवंत कठियाल, पालमपुर : किसानों की आर्थिकी सुदृढ़ करने के लिए बनाई गई योजनाओं को धरातल पर उतारने के लिए जायका महत्वपूर्ण भूमिका निभा रहा है। इसी कड़ी में हिमाचल प्रदेश फसल विविधिकरण प्रोत्साहन परियोजना, चरण-दो जायका के अंतर्गत खण्ड परियोजना प्रबन्धन इकाई पालमपुर द्वारा पहली प्राथमिकता परियोजनाओं (बहाव सिंचाई योजना चमरुहल कूहल, सोईयां कूहल, बलेहड कूहल, मझेनू कूहल व छूनाला कूहल) में कृषक विकास एशोसिएशन की बैठक मंगलवार को सम्पन्न हुई। बैठक का मुख्य उद्देश्य किसानों के साथ परियोजना द्वारा आधारभूत संरचना के विकास के साथ साथ किसानों के मौजूदा विभिन्न वर्गों के उत्थान के लिए बनाई गई योजना पर विचार विमर्श किया गया। बैठक में गरीबी रेखा से नीचे व अन्य असुरक्षित वर्ग के कृषक परिवारों को दी जाने वाली गतिविधियों के बारे में चर्चा की गई। अंत में बैठक में कृषक विकास एशोसिएशन ने उप परियोजना विकास योजना को अपनी मंजूरी दी। विभाग की ओर से डा. नागिंद्र नाग, डा. अमति भूषण, निधि, निवेत, विकांत, स्वाति, दिशा, शिवम व पारस शामिल रहे।

कृषि को मजबूत बनाने के लिए कार्यशाला का आयोजन

पालमपुर, 5 मार्च (प्रदीप): हिमाचल प्रदेश में कृषि पद्धतियों को बढ़ावा देने और किसानों को सशक्त बनाने के उद्देश्य से मंगलवार को पालमपुर में बाजार के नेतृत्व वाले विस्तार और मूल्य शृंखला के माध्यम से कृषि को मजबूत करना विषय पर कार्यशाला का आयोजन किया गया। हिमाचल सरकार के मीडिया एडवाइजर राजेश्वर ठाकुर ने बताया कि कार्यशाला का मुख्य उद्देश्य कृषि उपज के लिए बाजार के अवसरों को बढ़ाने के लिए सहयोगात्मक प्रयासों को सुविधाजनक बनाना और नवीन रणनीतियों का पता लगाना है। कार्यशाला का शुभारम्भ चौधरी सरबन कुमार कृषि विश्वविद्यालय पालमपुर के रजिस्ट्रार डॉ. मधु चौधरी ने किया।

कार्यशाला में विशेषज्ञों ने प्रसंस्कृत खाद्य पदार्थों के लिए मूल्य शृंखलाओं का लाभ उठाने, डेयरी गतिविधियों के माध्यम से किसानों को सशक्त बनाने और कृषि उत्पादों के लिए विपणन रणनीतियों का मूल्यांकन करने जैसे महत्वपूर्ण क्षेत्रों में गहन अध्ययन किया।

महिलाओं के सर्वांगीण विकास में महत्वपूर्ण भूमिका अदा कर रहे स्वयं सहायता समूह

पालमपुर, 4 मार्च (भृगु): कृषि विभाग के अतिरिक्त निदेशक डा. पवन शर्मा ने कहा है कि स्वयं सहायता समूह महिलाओं के सर्वांगीण विकास में महत्वपूर्ण भूमिका अदा करते हैं। खासकर महिलाओं के आर्थिक सशक्तिकरण का यह अब तक का सबसे बड़ा प्रमाणित माध्यम है। पालमपुर में हिमाचल फसल विविधिकरण प्रोत्साहन परियोजना की ओर से स्थानीय उत्पादों के मूल्य संवर्धन एवं बाजार की उपलब्धता विषय पर आयोजित की गई दो दिवसीय कार्यशाला का पहले दिन उद्घाटन करने के बाद उपस्थित जनसमूह को संबोधित करते हुए परियोजना की पहल की तारीफ करते हुए डा. पवन शर्मा ने कहा प्रदेश में वर्तमान में सक्रिय स्वयं सहायता समूहों के उत्पादों की वेल्यू एडिशन करके उन्हें बाजार देने की दिशा में जायका एच.पी.सी.डी.पी. बाजार की तमाम शक्तियों और अनुसंधान से संबंधित सभी एजेंसियों को एक मंच पर लाने के लिए जो अध्ययन कर रहा है, वो न



पालमपुर: स्थानीय उत्पादों के मूल्य संवर्धन एवं बाजार की उपलब्धता विषय पर आयोजित कार्यक्रम में स्थानीय उत्पादों का अवलोकन करते अधिकारी। (भृगु)

केवल सामान्य तौर पर स्वयं सहायता समूहों के लिए लाभप्रद होगा बल्कि परियोजना में जुड़ने जा रहे कुल 25000 किसानों में आने वाले दौर में स्थापित होने वाले समूहों के कृषि आधारित व्यावसायिक उत्पादों को उचित बाजार देने में भी महत्वपूर्ण भूमिका तय करेगा। परियोजना निदेशक डा. सुनील

चौहान ने कहा कि दो दिन का यह अनुसंधान और अध्ययन आने वाले समय में परियोजना में जुड़ने वाले 25000 किसानों के बीच से बनने वाले महिला कृषकों के स्वयं सहायता समूहों के व्यवसाय को बेहतर करने में महत्वपूर्ण भूमिका अदा करेगा। कार्यशाला में विषय आधारित व्याख्यान में नई दिल्ली

स्थित एक एन.जी.ओ. लीडर डा. निवेदिता नारायण ने स्वयं सहायता समूहों के लिए बाजार की प्राथमिक उपलब्धता और पैकेजिंग की जरूरत पर प्रकाश डाला।

कृषि वि.वि. पालमपुर की फूड साइंस की प्रोफेसर डा. अनुपमा संदल ने स्थानीय कृषि आधारित उत्पादों के वेल्यू एडिड प्रोडक्ट्स तैयार करने के तौर-तरीकों, तकनीकों और इनसे जुड़े पौष्टिक तत्वों की प्रचुरता पर उपस्थित स्वयं सहायता समूहों को विस्तृत जानकारी दी। कार्यक्रम को धर्मशाला के उद्यमों विकास सरीन और बैबनाथ निवासी सफल उद्यमी एवं पूर्व जिला परिषद सदस्य कामरेड अश्वजित सिंह ने भी संबोधित किया। कार्यक्रम का संवादन कार्यशाला की समन्वयक डा. सोनिया मिन्हास ने किया। इस अवसर पर डिप्टी प्रोजेक्ट डायरेक्टर डा. रविन्द्र चौहान, डा. योगेश कौशल, डा. अनुप कलना, डा. राजेश, डा. संतोष गुप्ता समेत पूरे प्रदेश भर से आए बी.पी.एम.यू. भी उपस्थित रहे।

विमर्श

कार्यशाला में स्वयं सहायता समूहों की भूमिका पर भी जगाया अलख

पालमपुर में लोकल प्रोडक्ट्स के बाजार पर मंथन

कार्यालय संवाददाता-पालमपुर

कृषि विभाग के अतिरिक्त निदेशक डाक्टर पवन शर्मा ने कहा कि स्वयं सहायता समूह महिलाओं के सर्वांगीण विकास में महत्वपूर्ण भूमिका अदा करते हैं। खासकर महिलाओं के आर्थिक सशक्तिकरण का यह अब तक का सबसे बड़ा प्रमाणित जरिया है। पालमपुर में हिमाचल फसल विविधिकरण प्रोत्साहन परियोजना की ओर से स्थानीय उत्पादों के मूल्य संवर्धन एवं बाजार की उपलब्धता विषय पर आयोजित की गई दो दिवसीय कार्यशाला का पहले दिन उद्घाटन करने के बाद उपस्थित जनसमूह को संबोधित करते हुए पवन शर्मा

ने कहा कि स्वयं सहायता समूहों की परिकल्पना सबसे पहले 1970 के दशक में सामने आई थी, जब महिलाओं के समूह के रूप में सेवा नामक संस्था का गठन किया गया था। इसके बाद अब पूरे देश में लाखों के हिसाब से स्वयं सहायता समूह काम कर रहे हैं। परियोजना की पहल की तारीफ करते हुए डाक्टर पवन शर्मा ने कहा प्रदेश में वर्तमान में सक्रिय स्वयं सहायता समूहों के उत्पादों की वेल्यू एडिशन करके उन्हें बाजार देने की दिशा में जाइका, एच.पी.सी.डी.पी. बाजार की तमाम शक्तियों और अनुसंधान से संबंधित सभी एजेंसियों को एक मंच पर लाने के लिए जो अध्ययन कर रहा है, वह न केवल सामान्य

तौर पर स्वयं सहायता समूहों के लिए लाभ देने वाला होगा बल्कि परियोजना में जुड़ने जा रहे कुल 25000 किसानों में आने वाले दौर में स्थापित होने वाले समूहों के कृषि आधारित व्यावसायिक उत्पादों को उचित बाजार देने में भी महत्वपूर्ण भूमिका तय करेगा। अपने संबोधन में परियोजना निदेशक डा. सुनील चौहान ने कहा कि दो दिन का यह अनुसंधान और अध्ययन आने वाले समय में परियोजना में जुड़ने वाले 25000 किसानों के बीच से बनने वाले महिला कृषकों के स्वयं सहायता समूहों के व्यवसाय को बेहतर करने में महत्वपूर्ण भूमिका अदा करेगा। उन्होंने बताया कि आईएचबीटी

पालमपुर और कृषि विवि पालमपुर के विशेषज्ञों के यहां से तमाम उत्पादों के मूल्य संवर्धन की दिशा में चल रहे प्रयासों को भी इसमें शामिल किया जाएगा, ताकि तकनीक और विज्ञान के अत्याधुनिक अनुभवों को भी स्वयं सहायता समूहों के साथ साझा किया जाए।

कृषि विवि पालमपुर की फूड साइंस की प्रोफेसर डाक्टर अनुपमा संदल ने स्थानीय कृषि आधारित उत्पादों के वेल्यू एडिड प्रोडक्ट्स तैयार करने के तौर-तरीकों, तकनीकों और इनसे जुड़े पौष्टिक तत्वों की प्रचुरता पर उपस्थित स्वयं सहायता समूहों को विस्तृत जानकारी दी।

बाजार की मांग के हिसाब से सब्जियों की पैदावार करेंगे किसान



■ जाइका ओडीए टीम ने माकड़ी का दौरा कर व्यापारिक खेती के बारे में की चर्चा

हिमाचल दस्तक ब्यूरो ■ बिलासपुर

बिलासपुर में हिमाचल प्रदेश फसल विविधिकरण प्रोत्साहन परियोजना चरण दो जाइका ओडीए के शेष कार्यक्रम के तहत प्रशिक्षण समन्वयक टाकीहीरो टाकागाकी एवं राष्ट्रीय सलाहकार डॉ. उमेश बाबू ने माकड़ी गांव का दौरा किया तथा लाभार्थी किसानों से व्यापारिक खेती के बारे में चर्चा की, जिससे किसानों की आर्थिकी मजबूत हो सके।

इस टीम में जिला परियोजना प्रबंधक हमीरपुर डॉ. अनूप कतना, कृषि विकास अधिकारी चिवेक शर्मा व मार्केटिंग अधिकारी रवि कटोच शामिल रहे। इस अवसर पर खंड परियोजना प्रबंधक डॉ. देवेन्द्र सांख्यान, कृषि विशेषज्ञ डॉ. विक्रम सिंह, कृषि विशेषज्ञ अमित शर्मा व कौशिक ठाकुर ने बिलासपुर जिले में चल रही गतिविधियों के बारे में चर्चा की तथा

शेष कार्यक्रम से संबंधित जानकारी साझा की। खंड परियोजना प्रबंधक डॉ. देवेन्द्र सांख्यान ने बताया कि शेष कार्यक्रम का मुख्य उद्देश्य किसानों को व्यापारिक फसलों अथवा सब्जियों की पैदावार के प्रति प्रोत्साहित करना है।

इस परियोजना के तहत अब लाभार्थी लघु व सीमांत किसान बाजार की मांग के हिसाब से अगेती सब्जियों का उत्पादन करेंगे जो मौसमी सब्जियों से पहले तैयार हो सकें, जिससे किसानों को अधिक लाभ मिल सके। डॉ. सांख्यान ने बताया कि इसके अलावा किसान स्वयं बाजार का सर्वे भी करेंगे। उन्हें इस बारे में प्रशिक्षित किया गया। इस दौरान प्रशिक्षण समन्वयक टाकीहीरो टाकागाकी एवं राष्ट्रीय सलाहकार डॉ. उमेश बाबू ने किसानों द्वारा किए गए सर्वे में शामिल जुखाला के सब्जी विक्रेताओं से भी बातचीत व चर्चा की।

कंडाघाट जदारी में नुकड़ नाटक से लोगों को किया जागरूक

गीतों से फसल विविधीकरण योजना का किया प्रचार प्रसार

द ब्यूरो

कण्डाघाट। हिमाचल प्रदेश कृषि विभाग की जाइका परियोजना से वित्त पोषित और संचालित 'फसल विविधीकरण प्रोत्साहन परियोजना' के प्रसार - प्रचार और किसानों को इसका लाभ उठाने के लिए जागरूक करने के उद्देश्य से बुधवार को कण्डाघाट के जदारी में शिवशक्ति कला मंच कुनिहर ने गीत, नुकड़ नाटक प्रस्तुत किए। राधा कृष्ण कृषक विकास समिति जदारी, ध्याड़ी, धाली के माध्यम से क्षेत्र में संचालित परियोजना के किसानों को जागरूक करने के लिए आयोजित इस कार्यक्रम में संदेश दिया गया कि फसलों को बदल - बदल कर लगाए इससे जमीन की उर्वरक क्षमता बढ़ती है। इसके लिए प्रदेश में जाइका परियोजना चरण दो के माध्यम से क्षेत्र के किसानों को सिंचाई योजनाएं, कुहरा, खेती उपकरण में पावर ट्रिलर, पावर थिडर जैसी अनेक सुविधाओं का लाभ उठाने के लिए मनोरंजन के साथ रोचक तरीके से जानकारी दी गई।



कार्यक्रम में जिला परियोजना प्रबंधक डॉ. संतोष गुप्ता, खंड परियोजना प्रबंधक डॉ. अरुण शर्मा, निर्माण अभियंताजी नमित गौतम, विपणन अधिकारी निशांत पर्यवेक्षक अभिषेक पटनिया ने बताया कि यह कृषि विभाग के माध्यम से परियोजना हिमाचल प्रदेश के सभी जिला में राज्य प्रबंधन यूनिट हमीरपुर से संचालित की जा रही है। इसके बाद क्षेत्रीय स्तर पर प्रदेश में चार यूनिट हैं छ सोलन की जिला यूनिट में चार जिलों का कार्य चल रहा है जिसमें सोलन में 22 और सिरमौर जिला में 16 शिमला और किन्नोर में 20 परियोजनाएं चल रही हैं। इसमें सिंचाई सहित अनेक सुविधाएं दी जा रही हैं। महिला मंडल जदारी प्रधान सुष्मा ठाकुर सहित उनका महिला मंडल भी

इस अवसर पर उपस्थित रहा। इस मौके पर कैबीएस के प्रधान प्रद्युम्न ठाकुर, सचिव रमेश ठाकुर,

सामस्वरूप भुवनेश सहित क्षेत्र के महिला पुरुष किसानों सहित 70 प्रतिभागियों ने हिस्सा लिया।

आगामी लोकसभा निर्वाचन-2024 के दृष्टिगत जिला शिकायत निवारण समिति गठित

द ब्यूरो

सोलन। जिला निर्वाचन अधिकारी एवं उपायुक्त सोलन मनमोहन शर्मा ने आगामी लोकसभा निर्वाचन-2024 के दृष्टिगत जिला शिकायत निवारण समिति का गठन किया है। इस सम्बन्ध में आवश्यक आदेश जारी किए गए हैं। यह समिति लोकसभा निर्वाचन के दृष्टिगत जल नकदी इत्यादि के सम्बन्ध में आमजन की असुविधा से बचाने और उनकी शिकायतों के निवारण

के लिए गठित की गई है। अतिरिक्त उपायुक्त सोलन अजय कुमार यादव को निर्वाचन व्यव अनुश्रवण प्रकोष्ठ का प्रभारी नियुक्त किया गया है। उनसे कार्यालय दूरभाष नम्बर 01792-223705 तथा मोबाइल नम्बर 98162-41915 पर सम्पर्क किया जा सकता है। जिला उद्योग केन्द्र के महाप्रबंधक सुरेंद्र कुमार ठाकुर को समन्वयक नियुक्त किया गया है।

HIMACHAL PRADESH AGRICULTURE DEVELOPMENT SOCIETY



H.P. CROP DIVERSIFICATION PROMOTION PROJECT

SOCIETY HQ: HAMIRPUR – 177001, H.P.

PBX (Tele-fax) +91-01972-223059

Emails: pdcdp-hp@nic.in, pmucdp-hp@nic.in

www.hpcdp.nic.in



Draft Project Operational Manual 2024

Table of Contents

1. PROJECT DESCRIPTION	1
1.1 Project Background	1
1.2 Project Objectives.....	2
1.3 Infrastructure Development.....	5
1.3.1 Infrastructure Development for Sub-Projects:.....	5
1.4 Farmers Support Component (including 10 sub-projects of Convergence Irrigation Schemes of IPH/DOA):	7
1.4.1 Formation and Strengthening of KVA:	7
1.4.2 Vegetable Promotion:	8
1.4.3 Pilot project for Small Horticulture Empowerment Project (SHEP):.....	8
1.4.4 Seed Production and Demonstration of Department of Agriculture (DOA):	8
1.4.5 Food Grain Productivity Training & Demonstration:.....	8
1.4.6 Provision of Farm Machinery	9
1.4.7 Program for Next Generation:	10
1.4.8 Research and Seed Production- R & D Support:.....	10
1.4.9 Infrastructure development at SAU for vegetable seed production:.....	10
1.4.10 Innovative Activities:.....	10
1.4.11 Livelihood support activities for on /off farm activities”	11
1.4.12 Nutrition Improvement Approach:	11
1.5 Value Chain and Market Development Component:.....	11
1.6 Institutional Development Component.....	12
2. STRUCTURE OF PROJECT MANAGEMENT UNIT.....	13
2.1 Overall Project Organizational Structure:	13
2.1.1 Department of Agriculture (DoA):	13
2.1.2 Governing Body:	13
2.1.3 Executive Committee:	14
2.1.4 Project Management Unit (PMU):.....	16
2.1.5 Staffing and Responsibility:	18
2.1.6 Roles and Responsibilities:.....	20
2.2 Recruitment of Personnel:	31
2.2.1 Project Director:	31
2.2.2 Officers and Staff:	31
2.2.3 Subordinate Staff:	32

2.2.4 Contractual Outsourcing of Personnel:.....	32
2.2.5 General Conditions of Service:.....	32
2.2.6 Code of Public Behavior:.....	32
2.2.7 Performance Appraisal System:	32
2.3 Disciplinary Matters:	32
2.3.1 Officers and Staff Deputed from DoA:	32
2.3.2 Officers and Staff Deployed through Outsourced Agency:	33
2.4 Capacity Building Interventions:	33
2.4.1 Trainings:.....	33
2.4.2 Field Visits:.....	33
2.4.3 Overseas Exposure Visits:	33
2.5 Project Management Consultant:.....	33
3. PROJECT IMPLEMENTATION ARRANGEMENT	34
3.1 Approach:	34
3.2 Fundamentals of Farmers’ Participation in the Project:	34
3.3 Project Framework:	35
3.4 Infrastructure Development Component:	36
3.4.1 Infrastructure Development for sub-projects.....	36
3.4.2 Crop Diversification through Convergence in Created Irrigation Potential of Irrigation Schemes of Jal Shakti Vibhag /DoA /Rural Development Department:	45
3.4.3 Infrastructure Development Support:	46
3.5 Farmers Support	48
3.5.1 Sub-component - 1	48
3.5.2 Sub-component - 2: Vegetable Promotion	49
3.5.3 Sub-component - 3: Research and Seed Production.....	65
3.5.4 Innovative Activities.....	67
3.5.5 Livelihoods Support for on /off farm activities:	68
3.5.6 Pilot project for SHEP	70
3.6 Value Chain and Market Development Component:.....	74
3.6.1 FPO Development Strategy	74
3.6.2 Bringing FPOs up as a Business Entity	77
3.6.3 Establishment of FPO’s Collection Centre:.....	94
3.6.4 Corpus Fund for sustainable activities of FPOs	95
3.6.5 Matching FPOs with Agribusiness operators:	95
3.6.6 Facilitation of Demonstration farm / Pilot business trials:	96
3.6.7 Modernizing Facilities and Equipment in Mandis:.....	98

3.6.8 Empowerment of Commission Agencies (CA) and Communication Network (CN):	99
3.7 Institutional Development Component.....	101
3.7.1 Strengthening of DOA:.....	101
3.7.2 Establishment of MIS &GIS and Monitoring System:	102
3.7.3 Construction of Training Centres:	103
3.7.4 Procurement of Equipment and Tools to PMU	103
3.7.5 Strengthening of Extension Service Function:	104
3.7.6 Baseline Survey and Impact Assessment:	106
3.7.7 Gender Mainstreaming:	107
3.7.8 Sexual Harassment of Women at Workplace:	109
3.8 Accountability:	112
3.8.1 Administrative Accountability & Grievance Redressal Mechanism	112
3.8.2 Social Accountability & Grievance Redressal Mechanism	112
3.8.2 Social Accountability & Grievance Redress Mechanism:-	113
3.9 Project Hand-Over:.....	114
3.10 Hand-holding:.....	115
3.11 Project Schedule:	115
4. PROCUREMENT	116
4.1 Types of Procurement.....	116
4.2 Pre-Procurement Activities.....	116
4.2.1 Specification	116
4.3 Procurement Method	116
4.3.1 ICB Rules:-	116
4.4 Procedures Other Than International Competitive Bidding (ICB) [Section 1.03]	123
4.4.1 Points of Attention for Executing Agencies:	123
4.5 Local (or National) Competitive Bidding Process.....	123
4.5.1 Limited Tender System-	125
4.5.2 Advertised Tender System –.....	126
4.5.3 Single Tender System –.....	127
5. ACCOUNTS & FUND MANAGEMENT	132
5.1 Accounting Procedure	132
5.2 Accounting Principles.....	132
5.3 Budget.....	132
5.4 Release of Funds.....	133
5.5 ERP Accounting Software.....	133
5.6 Fund Transactions.....	133

5.7 General Ledger	135
5.8 Stock and Stores	135
5.9 Management of Funds at SPMU	135
5.10 Management of Funds at the District PMUs	136
5.11 Management of Funds at the Block PMU	137
5.12 Income Tax	138
5.13 Goods & Services Tax (GST).....	138
5.14 Introducing Public Financial Management System in HPCDP-II	138
5.15 Loan Disbursement Procedure.....	143
5.16 Audit of Accounts.....	144
6. DELEGATION OF POWERS	159
6.1 Introduction:	159
6.2 Administrative and Financial Powers:.....	159
7. MANAGEMENT OF PROJECT ASSETS	166
7.1 What Is Asset Management?	166
7.2 Asset Management Plan:	166
7.3 Community based Asset Management in HPCDP-II:	166
7.3.1 Community Grower Group Establishment:	167
7.4.2 Community-based Geographic Information System (GIS):	169
7.4.3 Management of assets of Collection Centre-.....	171
7.4.4 Management of Solar Pumping System (SPS)-.....	172
7.4.5 Management of Farm Access Roads	173
7.4.6 Management of wire crates, silt retention structures installed for Catchment area treatment ...	174
7.4.7 Management of Farm Machineries-.....	175
7.4.8 Management of Solar/Electric Fencing:	178
7.4.9 Post Project Management of Community Assets: -.....	178
7.5 Management of Centre of excellence for vegetables and Centre for soil less cultivation/Hydroponics	179
7.6 Management of Training Centres constructed under the Project-	179
7.7 Management of the Training Centres for sustainable use-	179
7.8 Management of Assets created through Modernization of 13 Mandis under Himachal Pradesh State	180
7.9 Guidelines for Asset Management in Office: -.....	180
7.9.1 Main Categories of Recorded Assets in offices:.....	180
7.9.2 Inventory Management:.....	181
7.9.3 Management of Transport Equipment:	181

7.9.4 Management of Computer Equipment (Including Photocopying Machines)	183
7.9.5 Management of Telecommunication Equipment (Telephone, Fax):	184
7.9.6 Management of Air Conditioning Equipment:	184
7.9.7 Management of Office Furniture & Other Equipment:	184
7.9.8 Management of Office Premises:	185
7.9.9 Management of Expendable Items:	185
8. SOCIAL AND ENVIRONMENTAL SAFEGUARDS	188
8.1 Introduction:	188
8.2 Requirements as per JICA Guidelines:	188
8.3 Application of Environment and Social Management (ESM):	188
8.4 Environmental and Social Management Measures and Monitoring:	189
8.4.1 Preparation of Environmental Management Plan:	189
8.4.2 Preparation of Environmental Monitoring Plan:	193
8.4.3 Implementation and Monitoring of Sub-projects:	196
8.5 Institutional Arrangement and Capacity Development for ESAF:	197
8.5.1 Institutional Arrangement:	197
8.5.2 Capacity Development Programme:	200
8.6 Public Consultation Mechanism:	202
8.7 Grievance Redress Mechanism:	203
9. MONITORING AND EVALUATION	204
9.1 Objectives of Monitoring and Evaluation (M&E):	204
9.2 Monitoring and Evaluation Plan:	204
9.3 Monitoring Responsibilities:	205
9.3.1 Project Director:	205
9.3.2 Executive Committee (EC):	205
9.3.3 Project Management Consultancy (PMC):	205
9.4 M&E Arrangements:	205
9.4.1 Components to be monitored under M&E:	206
9.5 Reporting:	210
9.5.1 Annual Plan of Operation (APO):	210
9.6 Gender Sensitivity of M&E:	211
10. COMMUNICATION, GOVERNANCE & ACCOUNTABILITY	213
10.1 Introduction:	213
10.2 Augmentation of Management Information System (MIS):	213
10.3 Disclosure Policy:	213
10.4 Complaints and Response:	214

10.4.1 Responding to Procurement Complaints:	214
10.4.2 Responding to Complaints on Construction Quality:	215
10.5 Coordination Mechanism for Environmental and Social Issues:.....	216
10.5.1 District Level Coordination Committee:	216

List of Tables

Table 1.1: Project Components and Targets	2
Table 1.2: Targets for Infrastructure Development.....	6
Table 1.3: Micro Irrigation Schemes	6
Table 1.4: Summary of Procurement of Farm Machinery	9
Table 1.5: Provision of Poly House and Ploy Tunnel	10
Table 2.1: Details of PMU staff	18
Table 2.2: Job Description of Staff Provided by External Agency	24
Table 3.1: District-wise Projections of Catchment Area Treatment	38
Table 3.2: District-wise Projections of Farm Access Road Length	39
Table 3.3: Implementation Procedure	42
Table 3.4: Procedure and Executor	44
Table 3.5: Implementation Structure of Construction and O&M in Convergence Component.....	47
Table 3.6: Warranty period of the Different Works under Infrastructure Development.....	48
Table 3.7: Owner and O&M Responsibility and Regular activities	48
Table 3.8: Training of Farm Economy Management and farm management by farm type.....	51
Table 3.9: Training cum method demonstrations on cultivation practice of vegetable crops.....	51
Table 3.10: Food Grain's Productivity Training & demonstration.....	52
Table 3.11: Selection Procedure for Beneficiary of Farm Machinery	56
Table 3.12: Provision of Poly House and Poly Tunnel.....	59
Table 3.13: Program for Next Generation.....	64
Table 3.14: Young Farmers Program.....	65
Table 3.15: Summary of R&D Support	66
Table 3.16: Summary of Vegetable Seed Production in SAU	68
Table 3.17: Summary of Innovative Activities	69
Table 3.18: Sale Channel Development Procedure.....	74
Table 3.19: Value Chain and Market Development.....	76
Table 3.20: Growth Framework of FPOs.....	79
Table 3.21: Procedure of forming FPO.....	79
Table 3.22: Database on Land Resources & Human resources for PMVRP	81
Table 3.23: Detail of Farmers and Crops selected for PMVRP	82
Table 3.24: Final selection Database on Master Trainers	82
Table 3.25: Market Survey Questionnaire for Retailers/Wholesellers/others.....	84
Table 3.26: Market Survey.....	85

Table 3.27: Production Record	86
Table 3.28: Monitoring sheet	86
Table 3.29: Sales and Profit	88
Table 3.30: Final List of Market Stakeholders.....	88
Table 3.31: Subproject wise Value realization Plan (sample)	89
Table 3.32: Abstract on Cluster under PMVRP	90
Table 3.33: Abstract on Sub project selected under PMVRP	90
Table 3.34: Status of Approval of PMVRP	91
Table 3.35: Monitoring of PMVRP	92
Table 3.36: Operational Procedure for Demonstration Firm at COE.....	98
Table 3.37: Component Testing.....	98
Table 3.38: Budget outlay for different market yards	99
Table 3.39: Contents of the capacity development training	103
Table 3.40: Construction of Training Centres.....	104
Table 3.41: Procurement of Equipment and Tools to PMU	104
Table 3.42: Summary of the contents	105
Table 3.43: Capacity Development of Agriculture Extension staff	105
Table 3.44: Implementation Procedure for Trial on FPO based Extension System.....	106
Table 3.45: Overseas Training, Exposure/Study visits of Project staff and other stakeholders.....	107
Table 3.46: Upgrading of infrastructure of State Agriculture Management and Extension Training Institute (SAMETI).....	107
Table 3.47: Outline of Baseline Survey and Impact Assessment.....	108
Table 3.48: Activities to promote gender mainstreaming	108
Table 6.1: Delegation of Powers	161
Table 8.1: Indicative Environmental Management Plan	190
Table 8.2: Indicative Environmental Monitoring Programme	195
Table 8.3: Institutional Structure for ESAF Implementation and Monitoring	199
Table 8.4: Indicative Capacity Development Programme for Environmental and Social Safeguards.....	202
Table 8.5: Summary of FPIC Activities.....	203
Table 9.1: Qualitative and Quantitative Data of Monitoring Indicators	207
Table 9.2: Key Reporting Requirement at Various Levels	211

1. PROJECT DESCRIPTION

1.1 Project Background

The Study on Diversified Agriculture for Enhanced Farm Income was undertaken in the State of Himachal Pradesh by JICA in 2007, aiming at securing food self-sufficiency of small and marginal farmers and improving livelihood through crop diversification from food grains, to vegetables such as Cauliflower, Potato, Tomato, Cabbage, Capsicum, Peas and Kidney Beans. Based on the result of the study, the Official Development Assistance (ODA) Loan Project titled “Himachal Pradesh Crop Diversification Promotion Project (hereinafter referred to as “Phase-I”)” has been implemented by Government of HP with financial assistance of JICA in the 5 high potential districts of the State that is Hamirpur, Mandi, Kangra, Una, and Bilaspur. Furthermore, Technical Cooperation Project for Crop Diversification in Himachal Pradesh (hereinafter referred to as “TCP”) focusing on Development of the Crop Diversification Model in the pilot areas and Capacity development of the extension officers has been implemented under technical assistance of JICA for supporting smooth implementation of the ODA Loan Project. These activities of crop diversification and increase in farmers’ income were recognized as “Successful Model” in Himachal Pradesh and expected to be disseminated to other districts of Himachal Pradesh as well as to other states.

Despite of the fact that the Phase-I brought positive impact; there are still challenges in the sector of agriculture in Himachal Pradesh. First challenge is that there still remains the area of low food grains productivity and potential of crop diversification is not fully optimized yet. Second is that the backward and forward linkage throughout agri-food supply chain from production stage to the markets is not being built in an integrated manner in both aspects of hard infrastructure and software infrastructure.

With this background, “Himachal Pradesh Crop Diversification Promotion , Project Phase- 2” (hereinafter referred to as “the Project”) was prepared to tackle the above mentioned challenges by extending the Project coverage to all the districts including newly added 7 districts where there are different Agro-Ecological characteristics. The Project aims to disseminate “successful model” and introducing new approaches for value chain and market development.

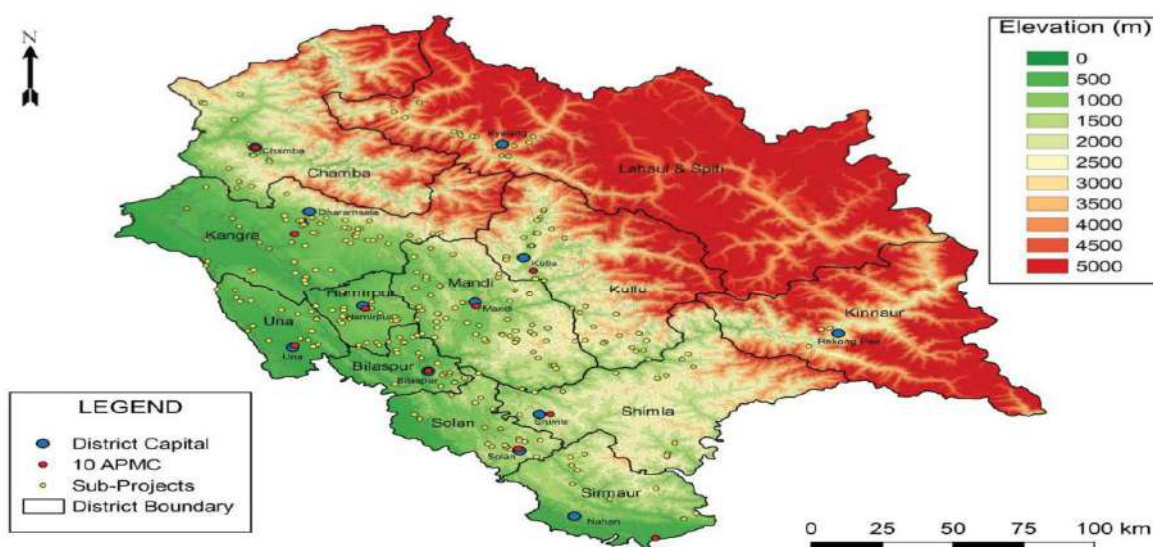


Figure1. Location MAP of Sub-Projects and APMC

1.2 Project Objectives

The objective of the Project is to “promote agricultural productivity, sustainable crop diversification to high value crops and improvement of farmers’ income by development of production infrastructure such as irrigation facilities and access Farm roads; farmers support and institutional development as well as strengthening farmer’s sales, force with marketing development, thereby contributing to economic and social development in all districts of Himachal Pradesh”.

Table 1.1: Project Components and Targets

Component/ Sub-Component	Target
1. Infrastructure Development	
(1) Infrastructure Development for sub-projects	
Minor Irrigation	296 sub-projects
Micro Irrigation Schemes	For Lift Irrigation Schemes & Tube Wells - Drip 92 ha - Sprinkler 184 ha For Flow Irrigation Schemes - Drip 280 ha - Sprinkler 280 ha
Catchment Area Treatment	Wire Crates: 189 Nos. Silt Retention Structure: 204 Nos.
Provision of Solar powered pumping machinery for lift irrigation and STW	83 sites
Farm Access Roads	62.4 km
Solar/ electric fencing for protection of vegetables on cost sharing	293.22km
(2) Crop Diversification through Convergence in created irrigation potential of irrigation Schemes of IPH/DOA	
Improvement of existing Irrigation schemes for distribution system	10 sub-projects
Micro Irrigation Schemes	Drip and sprinkler irrigation: 100 ha
2. Farmers’ Support Component	
(1) Formation and Strengthening KVA	
Awareness Camp involving Community	306 No.
Formation and formalization of KVAs	306 KVAs
Capacity development of KVAs for O&M Management	Workshop of group to develop objectives and norms: twice each sub-project
(2) Vegetable Promotion	
Incubation and capacity development of community motivators	Community Motivators: 306
Farm Economy Management, Training on farm management by farm type (advanced, intermediate and conservative)	-Intensive training (1st year) / Follow up training (2nd to 4th year) - Target: 306 sub-projects
Training cum method demonstration on Cultivation Practice of vegetable crops	- Conduct training and field demonstration (2crops x 8 or 16 demonstrations x 4 seasons) i) Training on overall cultivation management of vegetables 306 sub-projects

	ii)Promotion of organic farming: 10 sub-projects to be selected
Seed Production and Demonstration (DoA)	Seed Multiplication Farm at Karsog District of Mandi, Seed Production Farm at Bhattu, District of Kangra, Vegetable Development station at Bairtee, Distt of Solan
Food Grain's Productivity Training & demonstration	- Conduct training and field demonstration (2 crops x 2 demonstrations x 4 seasons in each sub-projects) - Target: 306 sub-projects
Provision of Farm Machinery	- Small and medium 4 wheel tractors (below 20hp) and Power Weeders -Attachment of small and medium 4 wheel tractors (below 20hp) -Small equipment such as knapsack sprayers etc.
Provision of poly houses & poly tunnels	- Training and demonstration (low tunnels) for vegetable seedlings (4 units x 306 sub-projects) - Installation of walk in tunnels (10mtsX4 mts=1 unit): 1 unit in the sub project having CCA 25 ha (197sub-projects x 4nos.) - Installation of poly houses including MIS with covering 105sqm 50 nos., (5 nos. x 10 FPOs) - Small poly houses in kitchen garden on cost sharing basis 85:15 -105 sqm poly house (306 nos.)
Program for Next Generation	- School Students: 70 schools - Young Farmers: 120 youth
(3) Research and Seed Production	
R&D support	11 research projects
Infrastructure development at SAU for vegetable seed production	20 ha. Seed Farm
(4) Innovative activities	
Establishment of Center of Excellence for Vegetable Nursery Production	2 centers one at SAU
Trial for soil-less cultivation/Fan Pad GH with Vertical System	1 no at SAU
Provision of Tubular Structure Shade-net Houses	50 nos.
Provision of Plastic Mulching Material	306 sub-projects 2,000sqm per sub-project
Provision of Anti- Hail Nets in Hail-prone Areas	153 sub-projects 500sqm per sub-project
Assistance for Soil Testing Kits	50 sites
(5) Livelihood Support Activities for on /off farm Activities	
Formation and formalization of SHGs	306 SHGs
Mushroom Cultivation	1,400 farmers
Raring of Honey Bees	280 farmers
Dairy Farming	140 farmers

Back-yard Poultry	918 farmers
Service Sector Training	1,200 farmers
Promotion of Shiitake Mushroom Cultivation	36,000 blocks
Promotion of on-farm Fish-Culture	30 farmers
Nutrition Improvement	60 KVAs
3. Value Chain and Market Development Component	
(1) Bringing FPOs up as a Business Entity	
Formation and formalization of FPO	10 FPOs
Business Management Training	10 FPOs
Training on Post-Harvest Handling and Value Addition	10 FPOs
(2) Establishment of FPO's Collection Center	
Construction of Collection Center	10 Collection Centers in 10 FPO's
(3) Matching FPOs with Agri-business Operators	
Matching FPOs with Agri-business Operators	1 time / year
Facilitation of Pilot Business Trials	1 testing farm 4 demonstration farm
(4) Modernizing Facilities and Equipment in Mandis	
Facility construction with equipment	Facility upgradation: 13 Mandis (APMC)
(5) Empowerment of CA	
Empowerment of CA	Training for CA's
4. Institutional Development Component	
(1) Strengthening of DOA	
Recruitment of PMU Staff (Out-Source)	<ul style="list-style-type: none"> - State PMU: 28 staff - District PMU: 64 staff - Block PMU: 294 staff -SCTC: 12 <p>The DoA staff (non-eligible) also to be allocated to PMU as ;</p> <p>State PMU: 9 Nos., District PMU: 10 Nos. Block PMU: 42 Nos. SCTC: 2 Nos.</p> <p>At the time of designing of the Project 398 Nos. posts of different categories were approved to be engaged through outsource basis. During the implementation of project, requirement of some other support staff has been felt to ensure high efficiency and effectiveness, meanwhile due to hiring of outsource agency for preparation of DPR of sub project, the project has limited requirement of engineering staff like Surveyors/TAs, JDMs/TA. Therefore, the strength of specific categories of outsource staff viz AEO (31), CE (20), JE (32), supervisor (30), Surveyor/TAs (8),</p>

	JDMs/TAs (18), Computer Assistant (27), Office Assistant (38) has been revised in 4 th EC meeting held on 4 th May, 2023.
Capacity Development of Project Staff on PDCA Cycle	10 training courses
Preparation, monitoring and update of supply chain and market development plan	Supply chain and market development plan: 10 Nos.
Preparation, monitoring and update of crop diversification plan for each sub-project	Crop diversification plan: 306 Nos
Procurement of ICT related equipment & Establishment of MIS &GIS and Monitoring System	1 system from SPMU to DPMU, BPMU and also linked with other stakeholders of the projects.
Construction of Training Centers	5 Nos.
(2) Strengthening of Extension Service Function	
Preparation of Information, Education and Communication (IEC) Material for Dissemination	- Disseminate crop diversification and methodologies employed under the project within the state with followings -Posters: 306 sub-projects
Capacity Development of Agriculture Extension Staff	7 training courses
Capacity Development of Engineering Staff	5 training courses
Strengthening of Research Extension-Farmer Linkages and joint visits	25 meetings
International/National/State-level Workshops/Seminars	International seminar: 2 times National seminar: 4 times State level workshop: 16 times
Overseas Training, Exposure/Study visits of Project Staff and Other Stakeholders	10 times
(3) Baseline Survey and Impact Assessment	
Conduct Baseline survey	Household survey in approximately 30 sites
Conduct Midline survey	- Household survey in 13 sites - Baseline survey of pilot project sites of nutrition sensitives, gender mainstreaming, livelihood support, SHEP etc (10% of each pilot activities)
Conduct Endline survey	Same sites where conducted Mid-line survey.
Gender Mainstreaming	
Gender Mainstreaming	Capacity Development of PMU Extension Officers and SHG on gender perspective in agriculture.
Project Management Consultant	
International Consultant	41M/M
National Consultant	682 M/M
Supporting Staff	723 M/M

1.3 Infrastructure Development

1.3.1 Infrastructure Development for Sub-Projects:

1.3.1.1 Minor Irrigation:

Based on the requirement as countermeasure to the present constraint of irrigation component for crop diversification, which was confirmed through series of interactions/workshops with the farmers and block agriculture officers, the basic strategy for irrigation development will focus on, development of minor irrigation systems, improvement of existing irrigation system, development of small-scale irrigation facilities, efficient water management and rain water harvesting.

Table 1.2: Targets for Infrastructure Development

	Unit	Target
Sub-project	No.	296
C.C.A.	Ha.	7433.41
Water Harvesting Structure	No.	52
Percolation Well	No.	28
Pump House	No.	94
Protection Work/Spur	No.	247
Pumping Machinery	No.	98
Tube Well	No.	11
Rising Main	M	58970
Main Delivery Tank	No.	98
Distribution System (HDPE pipeline)	M	683840
Outlet Chamber	No.	8154
Sluice-Valve Chamber	No.	422
Nallah (surface water) Crossing/Road crossing	No.	103
Retaining Wall	No.	4640
Diversion Weir	No.	177
Intake Chamber	No.	288
Main Channel	M	327100
Pucca Field Channel	M	167500
Storage Tank	No.	305
Others	Supply of Power, Sump Well, Dropping Structure, Water Measuring Devices, Gate, GI/RCC, Pipe, Fencing	

* Targets are tentative likely to Change after DPR preparation.

Table 1.3: Micro Irrigation Schemes

Total CCA (ha)	Area under LIS & TW (ha)	Area under FIS (ha)	Micro Irrigation System for LIS & TW		Micro Irrigation System for FIS	
			Area under Drip (5% of CCA)	Area under Micro & MiniSprinkler (10% of CCA)	Area under Drip (5% of CCA)	Area under Micro & MiniSprinkler (5% of CCA)
			(ha)	(ha)	(ha)	(ha.)
7433.41	1835.56	5597.85	92	184	280	280
			276		560	

* Tentative likely to change after DPR preparation.

1.3.1.2 Catchment Area Treatment:

Catchment area treatment is required to help recharging of the streams/nallahs which will further provide water for irrigation throughout the year. Under this component, Wire Crates and Silt Retention Structure are included.

Item	Total
Wire Crates (Tentative) (No.)	189
Silt Retention Structure (Tentative) (No.)	204

* Tentative likely to change after DPR preparation.

1.3.1.3 Provision of Solar Powered Pumping Machinery for Lift Irrigation and STW:

There are 103 sub- projects of LIS and STW including new and improvement scheme and solar pumping are expected to be installed to 83 LIS and STW sub-projects. Total number of solar pumping units is 83. (Solar panel with supporting frame, pump, motor, electrical panel, installation of electric devise and wires, etc.) The feasibilities shall be done by professional agencies before execution.

1.3.1.4 Farm Access Roads:

62.4 kms farm access roads (Cement Concrete Road W= 2.0 - 4.0m) from existing road linkages covering will be constructed /rehabilitated for timely transportation of farm produce and approach to the farmland to enhance harvesting profits from farmproduce.

1.3.1.5 Solar/Electric Fencing on Cost Sharing for Protection of Vegetables:

For protection of farmland from wild animals solar fencing will be installed by the Project through farmers' groups. The project share would be 90 percent out of total cost and beneficiary-share is 10%. Total length of solar/electric fencing to be installed will be **293.22 km.** with flexibility in interchanging in models depending upon actual need.

Item	Unit	Quantity
1) Solar electric powered fencing	m	99,795
2) Chain fencing with angle-iron	m	29,980
3) Chain fencing with RCC poles	m	19,967
4) Composite fencing with welded mesh & Solar power system	m	19,948
5) Barbed wire fencing with angle iron	m	98,745
6) Barbed wire fencing with iron poles	m	24,783

1.4 Farmers Support Component (including 10 sub-projects of Convergence Irrigation Schemes of IPH/DOA):

The component includes formation and strengthening of KVA, vegetable promotion, R&D support with strengthening of State Agriculture University (SAU), innovative activity, livelihood support activity and nutrition improvement.

1.4.1 Formation and Strengthening of KVA:

One KVA is formed for each sub-project, and KVA will operate and maintain the village infrastructure such as irrigation facilities and roads to be constructed or rehabilitated under the Project. The KVA also functions as a focal point for all activities carried out on a sub-project level except activities targeting SHGs such as livelihood and nutrition improvement activities.

1.4.1.1 Awareness Camp involving Community:

The staff belonging to BPMUs will invite the members of KVA to awareness camp for the explanation of the purpose of establishing KVA and its functions.

1.4.1.2 Capacity development of KVAs for O&M Management:

Capacity development training on operation and maintenance of irrigation and other infrastructure will be carried out by the BPMU. In the training, KVA will develop an operation and maintenance plan for infrastructure facilities. After the transfer of the facility, KVA will start to maintain the facility according to the O&M plan formulated. BPMU will give the necessary follow up training and advise through out the project period.

1.4.2 Vegetable Promotion:

Incubation and Capacity Development of Community Motivators:

The employment and incubation of community motivator, as adopted in Phase-I activities, will be implemented in Phase-II also. The selected community motivator will coordinate all activities in the target subproject and support the PMU.

1.4.2.1 Training of Farm Economy Management, Training on Farm Management by Farm-type (advanced, intermediate and conservative):

Farm management capacity will be strengthened through four years of follow-up through dissemination activities using resources in the State Agriculture University, KVK, advanced farmers, private companies and FPOs. In case there are farmers in the KVAs who intend to introduce fruits as diversification, the Project will facilitate in establishing contact with Horticulture Extension Officer for providing the technical support as well the planting material.

1.4.2.2 Training cum method demonstration on Cultivation Practice of vegetable crops

Cultivation skills training will be conducted through four cropping seasons (two years). The content of training module is as summarized in the **Table-2.2.2 of Attachment 1 of MOD**.

1.4.3 Pilot project for Small Horticulture Empowerment Project (SHEP):

The concept and experience of JICA initiative of Small Horticulture Empowerment Project (SHEP) will be introduced on pilot basis. Key points are: 1) participatory baseline survey carried out by farmers and extension officers together, 2) stakeholder forum for farmers to contact and discuss with actors from agricultural industry sector, 3) demand -driven technical training for farmer's requirement identified in market survey.

Training for SHEP approach will take place as a pilot activity targeting two KVAs in each BPMU, in total 28 KVAs. Training for SHEP will be conducted at the first cropping season and the second cropping season for each target group.

1.4.4 Seed Production and Demonstration of Department of Agriculture (DOA):

DoA's seed farms will be strengthened and developed through project for demonstrating of seed and other agricultural inputs and promote public private partnership in a way to demonstrate private company's seed and other inputs.

1.4.5 Food Grain Productivity Training & Demonstration:

Food grain cultivation training and demonstration will be conducted through four cropping seasons (two years). The summary of training is as summarized in the **Table -2.2.5 of Attachment 1 of MOD**.

1.4.6 Provision of Farm Machinery

The farm machinery will be provided on cost-sharing basis in which 50% of the actual machinery cost will be contributed by the Project. The farm machinery to be provided to the farmers summarized in the following table.

Table 1.4: Summary of Procurement of Farm Machinery

No.	Name of Machinery	Specification	Qty.
Tractor/Power Tillers/Power Weeder			
1	Tractor/Power Tillers	i. Power Tiller (08-15 PTO HP) ii. Tractor 15-20 PTO HP	306
2	Power Tiller/Weeder	i. Power Tiller (Below 8 BHP)	306
3	Power Weeder	i. Power Weeder (engine operated below 2 BHP)	1,008
		i. Power Weeder (Above 2 BHP)	1,008
Tractor/Power Tiller (Below 20 BHP) driven Equipment			
4	Land preparation / seed bed preparation	i. MB Plow ii. Disc Plow, iii. Cultivator, iv. Harrow, v. Leveler Blade, etc.	306
5	Equipment for harvesting	i. Thresher, ii. Multi Crop Threshers, iii. Paddy Thresher, iv. Brush Cutter, v. Winnowing Fan vi. Maize Sheller, vii. Reaper, viii. Mower	306
6	Chaff Cutter	i. Operated by Engine/Electric Motor below 3 HP Power Tiller, and Tractor of below 20 BHP Tractor)	918
7	Grass Weed Slasher		306
Manual/Animal Drawn Equipment/Implements/Tools			
8	Land preparation / seed bed preparation	i. MB Plow, ii. Disc Plow iii. Cultivator, iv. Harrow, v. Leveler Blade, vi. Furrow Opener, vii. Ridger, viii. Peddler	306
9	Sowing and Planting Equipment	i. Paddy Planter ii. Seed Cum Fertilizer Drill iii. Raised Bed Planter iv. Planter v. Equipment for Raising Paddy Nursery vi. Seed Treating Drum	306
10	Harvesting & Threshing Equipment	i. Thresher ii. Winnowing Fan iii. Maize Sheller iv. Feed Block Machine	306
11	Post Hole	i. Simple and non-mechanical equipment	306

	Digger/Augur		
Other Equipment			
12	Manual Knapsack Sprayer	i. Foot Operated Sprayer	612
13	Powered Knapsack Sprayer/Power	i. Capacity 8-12 lts	612
14		i. Capacity 12-16 lts	612
15	Operated Taiwan Sprayer	i. Capacity above 16 lts	306
16	Eco Friendly Light	i. Sub-project having CCA <25 ha (109 nos.)	109
17	Trap	ii. Sub-projects having CCA >25 ha (197 nos.)	394

Table 1.5: Provision of Poly House and Ploy Tunnel

No.	Item	Specification	Qty
1	Training cum method demonstration (low tunnels) for vegetable seedlings	3.6 sqm per unit miniature versions of high tunnels	1,184
2	Installation of walk in tunnels	Size:40 sqm (10 m x 4 m) For 109 sub-project having CCA <25 ha: 2 no.	218
3	Installation of walk in tunnels	Size:40 sqm (10 m x 4 m) For 197 sub-projects having CCA >25 ha: 4 nos.	748
4	Naturally Ventilated Greenhouse	105 sqm poly house including MIS	50
5	Small poly houses	105 sqm poly house	306

1.4.7 Program for Next Generation:

Program for next generation has potential to involve the youth in both undergoing education as well as those looking for career. With collaboration of Agriculture College and industrial training institute, target students of 30 number per school will be selected from 70 schools and conduct the program with utilization of their facility. The program will be outsourced to other consulting firm who has experience in entrepreneurship of the small business in rural areas. Technical Intern Training Program (TITP) for 129 Young Farmers.

1.4.8 Research and Seed Production- R & D Support:

The activities are mainly outsourced to SAU Palampur, and the quality of research is managed by PMU. The progress and results of the activities will be confirmed quarterly, and a result report meeting will be held every year.

1.4.9 Infrastructure development at SAU for vegetable seed production:

The objective of infrastructure development for vegetable seed production in the SAU is to establish the model seed production farm by utilizing/harnessing the maximum potential of University land resource. SAU will supply quality seeds to the farmers and diversify the traditional cropping pattern.

1.4.10 Innovative Activities:

Innovative activities aim at disseminating advance technologies for farmers for productivity improvement. The new Center of Excellence (COE) will be established for production of quality seedlings for vegetables such as tomato to the members of the KVAs. The COE will be utilized for pilot business trial to facilitate the collaboration between FPO and agribusiness operators.

1.4.11 Livelihood support activities for on /off farm activities”

In the target sub-project area, there are a certain number of landless, women headed families and people physical disabilities. The number of those famers is estimated at around 10% of total households. Livelihood improvement activities will be implemented for these socially vulnerable farmers to boost their crop diversification.

The activities will be carried out by cost-sharing basis with consensus of each SHGs. The sharing rate will be varied based on the financial capacity of the beneficiaries.

1.4.12 Nutrition Improvement Approach:

Basic approach under the sub component is to utilize resources & expand activities carried out under TCP. Nutrition improvement activities will be undertaken as a part of Farmer Support Component implemented by extension officers.

1.4.12.1 Sensitization of Nutrition Sensitive Intervention:

Sensitization of stakeholders for nutrition sensitive intervention will be the first activity under the sub-component. Stakeholders include Extension Officers in DPMUs, BPMUs, DoA, School Teachers, NGOs, women in SHGs, and Anganwadis. This sub-component will be implemented with following aims:

- **Dissemination of Kitchen Garden for Nutrition Improvement:**
Aim: To promote diet diversity for nutrition improvement by use of underutilized nutrient rich foods through self-consumption from home kitchen gardens.
- **Dissemination of Recipes Using Nutritious Ingredients:**
Aim: To promote and popularize consumption of underutilized/unutilized/unknown but nutritious foods that are easily available, are low cost or can be produced in kitchen gardens.
- **Nutrition Promotion under Next Generation Programme:**
Aim: To give students life-long knowledge and literacy and develop a habit of adapting diverse varieties on nutrient rich food.

1.5 Value Chain and Market Development Component:

Outline of Sub-components:

Strategy	Approach
To mobilize and incubate FPOs as a business entity	<ul style="list-style-type: none">• Bringing FPOs up as a business entity• Establishment of FPO's Collection Centers• Corpus Fund for Sustainable Activities of FPO
To facilitate participation of a wide range of private enterprises in the business	<ul style="list-style-type: none">• Matching FPOs with agribusiness operators• Facilitation of pilot business trials
To regulate a fair and competitive agricultural marketing system	<ul style="list-style-type: none">• Modernizing facilities and equipment in mandis• Empowerment of CAs

1.6 Institutional Development Component

Outline of Sub-components:

Activity	Approach
Strengthening of DOA	<ul style="list-style-type: none"> • Employment and Capacity Building of PMU staff • Procurement of necessary materials and equipment • Planning and monitoring introduction of ICT and MIS system
Strengthening of Extension Service Function	<ul style="list-style-type: none"> • Preparation of Information, Education and Communication (IEC) material for dissemination • Capacity Development of agriculture extension and engineering staff • Strengthening of research- extension-farmer linkages and joint visits • overseas training, exposure / study includes visits of project staff and other stakeholders • Up gradation of Infrastructure of State Agriculture Management and Extension Training Institute (SAMETI)
Baseline Survey and Impact Assessment	<ul style="list-style-type: none"> • Capacitate DOA staff in the project cycle management skills through implementation of baseline survey and evaluation activities
Gender Mainstreaming	<ul style="list-style-type: none"> • Preparation of gender policy of the Project • Gender awareness training for empowerment of SHGs • Livelihood Improvement Program under Farmers' Support Program • Capacity Development of Agriculture Extension Staff • Monitoring of gender perspective in the project implementation

2. STRUCTURE OF PROJECT MANAGEMENT UNIT

This chapter describes the implementation plan of the project which consists of the Project Organizational Structure, Implementation Schedule, Procurement Plan, Quality Control, Contract Management, and Safety Management for the construction works.

2.1 Overall Project Organizational Structure:

2.1.1 Department of Agriculture (DoA):

The DoA is the nodal agency for HPCDP Phase-II. It shall work as a channel between the Executive Committee and the PMU in respect of all necessary communication, correspondence and related matters in respect of the Project with relation to communication/ note/ report, etc. sent and received by the PMU, whereas in some aspects like reimbursement claims and routine budget forecast, the PMU shall communicate directly with JICA.

2.1.2 Governing Body:

The Project Management Unit (PMU) works under the overall supervision and guidance of the Governing Body formed by Government of Himachal Pradesh (GoHP) vide Notification No. Agr-B-F (1)-19/2020, dated 5th March 2021. Notification is at Annexure.

2.1.2.1 Composition of the Governing Body:

S No	Designation	Designation in the Governing Body
1	Agriculture Minister, Government of Himachal Pradesh	President
2	ACS/ Pr. Secretary/Secretary (Agri) to the Govt. of H.P.	Vice-President
3	ACS/ Pr. Secretary/Secretary (Finance) to the Govt. of H.P.	Member
4	Advisor (Planning), GoHP	Member
5	Chief Project Advisor, State Project Management Unit	Member
6	Director of Agriculture, GoHP	Member
7	Representative of Ministry of Agriculture & Farmers Welfare, DAC, Govt. of India	Member
8	Vice Chancellor, CSKHPKV, Palampur, H.P.	Member
9	Managing Director, Himachal Pradesh, State Agricultural Marketing Board	Member
10	Executive Director, SPNF	Member
11	Project Director, State Project management Unit	Member Secretary

Two non-official members to be nominated by Government of Himachal Pradesh from progressive farmers.

2.1.2.2 Functions and Powers of Governing Council:-

The **Governing Council** shall have the following functions and powers:

1. Observe the provisions of the Memorandum of Association rules and such instructions of Govt. of H.P. in department dealing with the affairs of the Himachal Pradesh Agriculture Development Society as may be the issues from time to time.

2. Exercise general control and issue such directions for the efficient management and administration of the affairs of the Himachal Pradesh Agriculture Development Society as may be necessary.
3. Nominate members of the Executive Council as per the rules.
4. Approve the annual budget of the Himachal Pradesh Agriculture Development Society drawn up by the Executive Council and approve the budget for submission to the Govt. of H.P. for sanction of grants.
5. Consider the Annual Report approved by the Executive Council.
6. Consider the Balance Sheet and Audited Accounts.
7. Add and amend with prior approval of the Govt. of H.P. the rules of the Himachal Pradesh Agriculture Development Society.
8. Form Bye-laws not inconsistent with these rules and the memorandum of association for the management, administration & regulation of the business of the Himachal Pradesh Agriculture Development Society for the furtherance of its objectives.
9. To constitute Committees with or without powers to control namely:
 - (i) Executive Committee.
 - (ii) Any other Committee deemed necessary.
10. To perform such other functions as are entrusted to it, under these rules.
11. The Governing Body may by resolution delegate the powers to its Chairman or of any Standing Committee or the Project Director, State PMU or to any other officer of the Himachal Pradesh Agriculture Development Society such of its powers for the conduct of business as it may deem fit.

2.1.3 Executive Committee:

The affairs of the PMU are administered by an Executive Committee under the Governing Body. The Executive Committee is responsible for overall administration, monitoring, technical quality control and formulating guidelines for operation and function of the PMU.

2.1.3.1 The composition of the Executive Committee are:

S No	Designation	Designation in the Governing Body
1	ACS/Principal Secretary/Secretary (Agriculture) to the Govt. of H.P	Chairman
2	ACS/Principal Secretary/Secretary (Finance) to the Govt. of H.P	Member
3	Advisor (Planning), H.P.	Member
4	Representative of Ministry of Agriculture & Farmers Welfare, DAC, Govt. of India	Member
5	Representative of JICA India Office	Member
6	Chief Project Advisor, State Project Management Unit	Member
7	Director of Agriculture, H.P.	Member
8	Managing Director, H.P. State Agricultural Marketing Board	Member
9	Executive Director (SPNF)	Member

10	Chief Advisor TCP	Member
11	Team Leader, PMC	Member
12	Four District Project Managers	Members
13	Project Director, State Project Management Unit as Member Secretary	Member Secretary

2.1.3.2 Functions and Powers of Executive Committee:-

1. It shall be the responsibility of the Executive Committee to endeavor to achieve the objectives of the Society and to discharge all its functions. The Executive Committee shall exercise all administrative and financial powers including powers to create posts of all descriptions and make appointments thereon in accordance with regulations.
2. The Executive Committee shall have under its control the management of all the affairs and funds of the Society.
3. The Executive Committee shall have the powers and responsibilities in respect of the following:
 - (a) To frame regulations with the approval of the State Government.
 - (b) To frame amend or repeal any bye laws for the conduct of activities of the Society in furthering its objectives with the approval of the Governing Council.
4. The Executive Committee shall have the powers to enter into arrangement with other public or private organizations or individuals for furtherance of the objectives of the society.
5. The Executive Committee shall have the powers for securing and accepting endowments, grants-in-aid, donations, or gifts to the Society on mutually agreed terms and conditions of gifts shall not be inconsistent or in conflict with the objectives of the Society or with provisions of these rules.
6. The Executive Committee shall have the powers to take over and /or acquire in the name of the Society by purchase, gift or otherwise from Government and other public bodies or private individuals, any movable and immovable properties in the State or elsewhere or other funds together with any attendant obligation and engagement not inconsistent with the objectives of the Society and the provisions of these rules.
7. The Executive Committee shall take all steps to establish Project Management Unit or any other institution at State Level, District Level and Block Level required for the successful implementation of the Project.
8. The Executive Committee shall have the powers to sell or give on lease any movable or immovable property of the Society provided, however, that no asset of the Society created out of Govt. grants shall without the approval of the Government be disposed off, encumbered or utilized for purpose other than those for which the grant was sanctioned.
9. The Executive Committee shall also:
 - (a) Consider and approve the Annual Plan of operation of Project "Himachal Pradesh Crop Diversification Promotion Project.

- (b) Consider and approve the Annual budget of the Project.
 - (c) Sort out problems in the implementation of the Project.
 - (d) To ensure coordination with the line Departments/Agencies for the Project activities.
 - (e) To review the implementation of the activities under the projects.
 - (f) Perform any other works assigned by the Government.
10. The Executive Committee may delegate to the Chairman, Project Director or any of its members and /or to a Committee/ Group or any other officer of the Society /Project such administrative and financial powers and impose such duties as it deems proper and also duties that are to be exercised or discharged in furtherance of the objectives of the society.

2.1.4 Project Management Unit (PMU):

2.1.4.1 State Level PMU (SPMU):

The State PMU Office, which is the Central Office of the PMU, is situated at Hamirpur, District Hamirpur, Himachal Pradesh. The State PMU Office is responsible for the overall management of HPCDP.

2.1.4.2 District Level PMU (DPMU):

There are four District PMU Offices:-

- (i) District PMU Office at Hamirpur District; covering three districts, namely, Hamirpur, Bilaspur and Una,
- (ii) District PMU Office at Palampur District; covering two districts, namely, Kangra and Chamba,
- (iii) District PMU Office at Mandi District; covering three districts, namely, Mandi, Kullu and Lahaul & Spiti, and
- (iv) District PMU Office at Solan District; covering four districts, namely, Sirmaur, Solan, Shimla and Kinnaur.

The District PMU Offices are responsible for management of district level activities of HPCDP in their respective district jurisdictions.

2.1.4.3 Block Level PMU (BPMU):

There are 15 Block PMU Offices:-

- (i) One each in Hamirpur, Bilaspur and Una;
- (ii) Four in Mandi, viz. Mandi, Gohar, Kullu and Sarkaghat;
- (iii) Four in Palampur, viz. Palampur, Kangra, Dharamshala, Chamba, and Jawali;
- (iv) Three in Solan, viz. Solan, Nahan and Rampur.

The Block PMU Offices are responsible for execution and supervision of field level activities of HPCDP and providing technical advice in their respective district jurisdictions.

The organizational structure of the PMU and jurisdiction of each are provided as follows:

Organization Chart

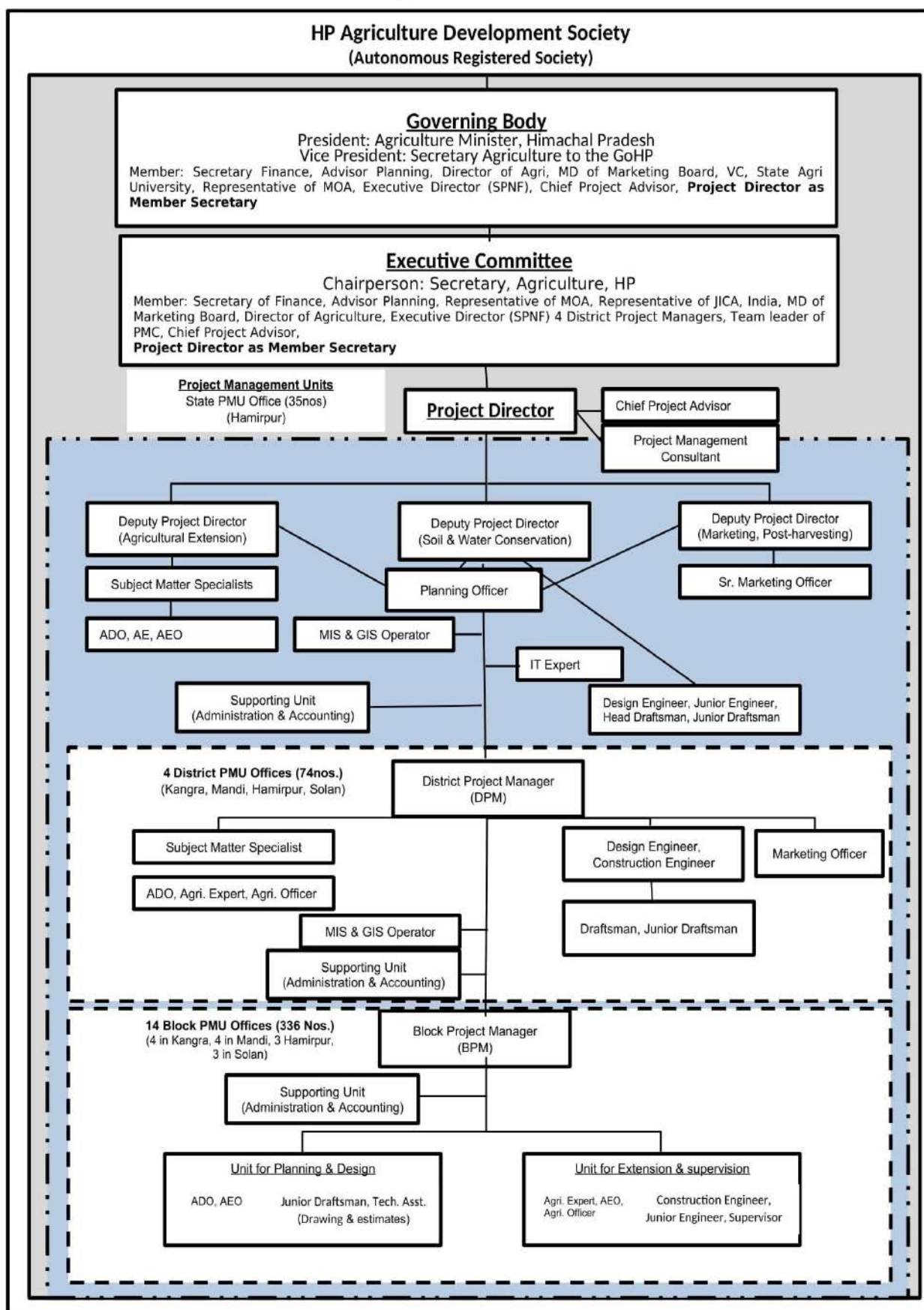


Figure 2: Jurisdiction of Each PMU Office

2.1.5 Staffing and Responsibility:

The PMU is staffed by officials deputed from the Department of Agriculture, GoHP as well as by hiring of qualified and experienced personnel from external agencies on contractual basis. The selection of the external agency is done through open local competitive bidding.

The staffing pattern of PMU is given below:-

Table 2.1: Details of PMU staff

Sl. No	Name of Post	Details of Staff			Total
		PerUnit	DOA	Outsource	
(A) State Level PMU					
1	Chief Project Advisor	1	0	1	1
2	Project Director	1	1	0	1
3	Deputy Project Director	3	3	0	3
4	Subject Matter Specialist	4	4	0	4
5	Agriculture Development Officer	3	3	0	3
6	Finance Officer	1	0	1	1
7	Planning Officer	1	0	1	1
8	Office Manager	1	0	1	1
9	Manager (HRD)	1	0	1	1
10	Accountant	1	0	1	1
11	Computer Assistant	4	0	4	4
12	Office Assistant	5	0	5	5
13	Private Secretary	1	0	1	1
14	Drivers	2	0	2	2
15	Office Attendant	4	0	4	4
16	Office Upkeep	1	0	1	1
17	Night Watchman	1	0	1	1
18	Sr. Design Engineer	1	0	1	1
19	Construction Engineer	1	0	1	1
20	H.D.M.	1	0	1	1
21	Junior Engineer	1	0	1	1
22	MIS/GIS Operator	1	0	1	1
23	MIS/GIS Technician	1	0	1	1
24	I.T Experts	2	0	2	2
25	Senior Marketing Officer	1	0	1	1
26	AEO	1	0	1	1
Total (A)		45	11	34	45
(B) District Level PMU					
1	District Project Manager	1	4	0	4
2	Subject Matter Specialist	1	4	0	4
3	Agri Dev. Officer (Kangra & Mandi)	1	2	0	2
4	Agri. Expert	1	0	4	4
5	Agri. Officer	1	0	4	4
6	Design Engineer	1	0	4	4

Sl. No	Name of Post	Details of Staff			Total
		PerUnit	DOA	Outsource	
7	Construction Engineer	1	0	4	4
8	Drafts Man	1	0	4	4
9	JDM/TA (Drawing & Estimate)	1	0	4	4
10	Surveyor/ Tech. Assistant (Survey)	2	0	8	8
11	Marketing Officer	1	0	4	4
12	MIS/GIS operator	1	0	4	4
13	Office Manager cum Accountant	1	0	4	4
14	Office Assistant	1	0	4	4
15	Computer Assistant	2	0	8	8
16	Office Attendant	2	0	8	8
17	Night Watch Man	1	0	4	4
18	Office upkeep	1	0	4	4
Total (B)		21	10	72	82
(C) Block Level PMU					
1	Block Project Manager	1	14	0	14
2	Agri. Dev. Officer	1	14	0	14
3	Agri. Extension Officer	1	14	0	14
4	Agri Expert	2	0	28	28
5	Agri. Officer	1	0	14	14
6	AEO	2	0	30	30
7	Junior Engineer	2	0	31	31
8	Construction Engineer	1	0	15	15
9	JDM/TA (Drawing & Estimates)	1	0	14	14
10	Supervisor	2	0	30	30
11	Office Manger cum Accountant	1	0	14	14
12	Computer Assistant	1	0	14	14
13	Office Assistant	1	0	28	28
14	Office Attended	1	0	14	14
15	Night watchman	1	0	14	14
16	Office up keep	1	0	14	14
Total (C)		20	42	260	302
(D) Shiitake Cultivation and Training Centre					
1	Shiitake Disseminator (SMS)	2	2	0	2
2	Computer Assistant	1	0	1	1
3	Office Attendant	2	0	2	2
4	Office Assistant	1	0	1	1
5	Factory Worker	4	0	4	4
6	Cultivation Worker	3	0	3	3
7	Night Watchmen	1	0	1	1
Total		14	2	12	14

At the time of designing of the Project 398 Nos. posts of different categories were approved to be engaged through outsource basis. During the implementation of project, requirement of some other support staff has been felt to ensure high efficiency and effectiveness, meanwhile due to hiring of outsource agency for preparation of DPR of sub project, the project has limited requirement of engineering staff like Surveyors/TAs, JDMs/TA. Therefore, the strength of specific categories of outsource staff viz AEO (31), CE (20), JE (32), supervisor (30), Surveyor/TAs (8), JDMs/TAs (18), Computer Assistant (27), Office Assistant (38) has been revised in 4th EC meeting held on 4th May, 2023.

2.1.6 Roles and Responsibilities:

The job responsibilities of the different functionaries relating to the PMU are described hereunder.

2.1.6.1 Department of Agriculture (DoA):

The DoA is the nodal agency for HPCDP. It shall work as a channel between the Executive Committee and the PMU in respect of all necessary communication, correspondence and related matters in respect of the Project with relation to communication/ note/ report, etc. sent and received by the PMU, whereas in some aspects like reimbursement claims and routine budget forecast, the PMU shall communicate directly with JICA.

2.1.6.2 Project Director:

The Project Director shall be the Principal Executive Officer of the Project and shall be responsible for proper administration of the affairs and funds of the Project and efficient implementation including management of procurement and budget, preparation and production of annual progress reports and financial statement and monitoring/ evaluation of the Project, in a mission mode under the directions and guidance of the Chairperson of the Executive Committee. The Project Director shall exercise all the technical, administrative, financial and disciplinary authority powers as delegated to him/her by the GoHP/ Governing Council/ Executive Committee of the Society.

For the effective discharge of his/her functions he/she shall have powers to:

- Prescribe the duties of the officers and staff of the Project.
- Exercise such supervision and disciplinary control, as may be necessary.
- Coordinate and exercise general supervision over the activities of the Project including the District and Block PMU offices.
- Conduct meetings of the PMU and its committees and keep a record of proceedings of these meetings in accordance with the rules.
- Exercise financial, technical and administrative powers as delegated to him/her by the Executive Committee.
- To accord expenditure sanction for deviation of purchase/civil works repair etc. upto 20%.
- Discharge such other functions as may be or may already have been assigned to him/her by the GoHP, Governing Council/ Executive Committee in furtherance of the objectives of the Project.

- Prepare budget and appropriation proposals for JICA funded HPCDP for consideration and approval by Executive Council/ GoHP.
- Submit all reports and returns to the Executive Council/ Government/JICA (Monthly/ Quarterly/ Annual Progress reports).
- Exercise all powers delegated to him/her by the Executive Committee/ Governing Council/ GoHP and is directly answerable to the Executive Committee/ Governing Council/ GoHP being head of the State PMU.

2.1.6.3 Deputy Project Director (Agricultural Extensions):

- Assist Project Director in all matters of administration and formulation of policy, plan and rules.
- Assist Project Director in planning, implementation, review and monitoring and evaluation of all extension activities.
- Arrangements of inputs as per requirements of District Level PMU.
- Assist Project Director to maintain linkage with different agricultural institutions.
- Organize state level training programs and other activities.

2.1.6.4 Deputy Project Director (Soil and Water Conservation)

- Scrutinize notes of dealing hands relating to engineering, soil and water conservation and record where necessary note, comments and suggestions.
- Monitor the activity of catchment area treatment in the project area.
- Facilitate the PMU's subordinate staff for survey, investigation and collection of data relating to creation of Irrigation facilities and related infrastructure.
- Ensure all plans and estimates of engineering nature is properly checked, corrected if necessary and authenticated.

2.1.6.5 Deputy Project Director (Marketing and Post-Harvest)

- Assist Project Director in implementing the value chain & market development, livelihood activities, farm mechanization, SHEP programme, innovative activity & Gender mainstreaming.
- Planning, preparation & monitoring of APO's.
- Matter related to SAU, DoA Farm.
- Matter related to KVA's and different farmers organization.

2.1.6.6 Subject Matter Specialist

- Coordinate, oversee and assist Deputy Project Directors (DPDs).
- Coordinate, oversee progress of the project.
- Assist DPDs in providing technical inputs, as and when required, for implementation of the project.
- Act as information officer.
- Examine and response to grievances/ complaints received.

2.1.6.7 District Project Managers:

- District Project Manager (DPM) will be overall in-charge of the project implementation at district unit.
- DPM shall exercise financial, administrative and technical powers of district level officers i.e. Deputy Director of Agriculture, and shall be the controlling officer of the staff working in their units. They shall also continue to perform the duties and enjoy powers as may be or may have been assigned to them by the GoHP/ Executive Committee or the Project Director PMU State Level.
- To accord expenditure sanction for deviation of purchase/civil works repair etc. upto 5%.
- Planning and implementation of BPMU-wise project program.
- Arranging and stocking of all project materials including agriculture inputs as per requirement of Block PMU.
- Effective control of Block PMUs and timely monitoring and evaluation of project program.
- Component wise reporting of the achievements every month to the Project Director.
- To obtain approval of Detailed Project Reports from State Level PMU.
- Monitoring of infrastructural development and extension programs with the help of Subject Matter Specialist and Assistant Engineer and execute test checks.
- Review availability of seed, fertilizer, plant protection material and other inputs.
- Review plant protection measures and sale stock position from time to time including private sale.
- Organize review meeting of BPMUs every month.

2.1.6.8 Subject Matter Specialist (DPMU):

- Prepare sub-project-wise action plan for agriculture extension activities.
- Assist DPM in planning, implementation, review and monitoring and evaluation of all extension activities.
- Arrange and stock all the inputs at all the points in block, timely and adequately.
- Undertake intensive touring during the campaign period.
- Inspection of field problems such as diseases, insect pest attacks etc.
- Ensure full utilization of irrigation potential
- Organize field days/demonstrations under various schemes.
- Coordinate with Panchayat Samitees at Block PMU level.
- Prepare information regarding agriculture activities.
- Review and monitor agricultural extension activities under his/her jurisdiction.
- Assist DPM in training programs and related activities

2.1.6.9 Block Project Manager (BPM):

The BPM shall be the controlling officer of the Block PMU and shall be responsible for supervision and implementation of the different components and sub-projects of HPCDP.

He/She shall also coordinate, as necessary, with other Government departments and agencies to facilitate the project implementation. Further, BPM shall be responsible for supervision and guidance of the community motivators and for initiating formation of Krishak Vikas Associations.

- Exercise financial, technical and administrative powers as delegated to him/her by the Executive Committee.
- Acceptance of lowest tenders and award of work with or without negotiation with the lowest tenderers for construction/repair & maintenance of civil works/purchases/hiring of services etc. up to 10 lakh.

2.1.6.10 Agriculture Development Officer:

- Assist and coordinate Block Project Manager in planning and execution of various project activities.
- Assist and coordinate Block Project Manager in preparation of APO and its implementation, accordingly.
- Guide Agricultural Expert, Agricultural Officer and Agricultural Extension Officers (AEOs) in all agricultural development and extension activities providing latest technological know-how and solutions to the field problems.
- Arranging and stocking all the inputs at all the points in the Block PMU timely and adequately.
- Organize farmers training camps at sub project level with the help of concerned Extension Officers.
- Report shortage of seed, fertilizer etc., if any, immediately to the Block PMU Manager.
- Undertake intensive touring during the campaign period.
- Ensure full utilization of irrigation potential.
- Report the achievement every month to the Block PMU Manager.

2.1.6.11 Agriculture Extension Officers:

- Conduct field survey.
- Assess technological and input requirements of farmer/farmers organizations.
- Arrange inputs and other demonstration material.
- Organization and capacity building of farmers groups.
- Identification of farmer groups need for training, demonstration and exposure visit etc. and organization of training, demonstration and exposure visits, etc.
- Collection of soil samples representing village, Panchayat and submission to District Laboratory and ensures distribution of soil health cards.
- Coordination with Panchayats and linkages with other institutions.

Table 2.2: Job Description of Staff Provided by External Agency

Sl. No.	Name of Post	Job Description
1	Agriculture Expert	<ul style="list-style-type: none"> ▪ To plan, coordinate and execute agriculture development activities in his/her area of jurisdiction. ▪ To motivate farmers for crop diversification and to prepare crop diversification plans. ▪ To organize trainings, field demonstrations and exposure visits of the farmers. ▪ To organize farmers to Self Help Groups, Farmer Organizations, Commodity Groups and to create awareness about FPO/FPC. ▪ To create awareness regarding water harvesting, soil conservation, irrigation, water use and micro-irrigation. ▪ To introduce new machinery/technology for saving of time and energy. ▪ To facilitate market information, post-harvest, value addition marketing and processing. ▪ To maintain proper record of field activities, reports/returns. ▪ Any other work assigned by the higher authorities.
2	Agriculture Officer	<ul style="list-style-type: none"> ▪ To plan, coordinate and execute agriculture development activities in his/her area of jurisdiction. ▪ To motivate farmers for crop diversification and to prepare crop diversification plans. ▪ To organize trainings, field demonstrations and exposure visits of the farmers. ▪ To organize farmers to Self Help Groups, Farmer Organization, Commodity Groups and to create awareness about FPO/FPC. ▪ To create awareness regarding water harvesting, soil conservation, irrigation, water use and micro-irrigation. ▪ To introduce new machinery/technology for saving of time and energy. ▪ To facilitate market information, post-harvest, value addition marketing and processing. ▪ To maintain proper record of field activities, reports/returns. ▪ Any other work assigned by the higher authorities.
3	Agriculture Extension Officer	<ul style="list-style-type: none"> ▪ To plan, coordinate and execute agriculture development activities in his/her area of jurisdiction. ▪ To motivate farmers for crop diversification and to prepare crop diversification plans. ▪ To organize trainings, field demonstrations and exposure visits of the farmers. ▪ To organize farmers to Self Help Groups, Farmer Organization, Commodity Groups and to create awareness about FPO/FPC. ▪ To create awareness regarding water harvesting, soil conservation, irrigation, water use and micro-irrigation.

Sl. No.	Name of Post	Job Description
		<ul style="list-style-type: none"> ▪ To introduce new machinery/technology for saving of time and energy. ▪ To facilitate market information, post-harvest, value addition, marketing and processing. ▪ To maintain proper record of field activities, reports/returns. ▪ Any other work assigned by the higher authorities.
4	Planning officer (Consultant)	<ul style="list-style-type: none"> ▪ Planning of APO ▪ Monitoring of the project at SPMU level. ▪ Financial arrangements. ▪ Co-ordination with State Planning Department/ Finance Department. ▪ To plan studies, evaluation during the project period. ▪ Any other work assigned from time to time.
5	Finance officer	<ul style="list-style-type: none"> ▪ Management of accounts, ▪ Financial arrangements from the Govt. /JICA. ▪ Preparation of reimbursement, budget claims. ▪ Internal inspection of units. ▪ Reconciliation/audit/inspection of records, accounts. ▪ Expenditure report and monitoring. ▪ Conducting audit ▪ Any other work assigned.
6	Chief Project Advisor	<ul style="list-style-type: none"> ▪ To support the project in co-ordination and liaison with DOA, State Govt., Govt. of India, JICA, and TCP. ▪ To advise and assist the Project in smooth implementation of Project. ▪ To assist in coordinating visits of missions, study/evaluation teams. ▪ To assist in conduct of EC/GC meetings and activities of TCP. ▪ To introduce new innovations, technologies in association with SAU/ICAR. ▪ He shall report to the Chairman EC and shall be performing his duties by working from office/home as per the need. ▪ He will be entitled for vehicle, support staff as per Phase-I and all perks of HOD.
7	Private Secretary	<ul style="list-style-type: none"> ▪ Maintaining diaries and arranging appointments. ▪ Handling of correspondence, maintaining records including filing and indexing, maintain various records, books of accounts and registers etc., attending telephone calls and preparing tour programmes. ▪ Any other work.
8	Senior Marketing Officer	<ul style="list-style-type: none"> ▪ Developing FPOs and making FPOs as Agri business entities ▪ Builds market position by locating, developing, defining, and closing business relationships. ▪ Tracks individual contributors and their accomplishments. ▪ Locates or proposes potential business deals by contacting potential

Sl. No.	Name of Post	Job Description
		<p>partners.</p> <ul style="list-style-type: none"> ▪ Discovers and explores business opportunities. ▪ Screens potential business deals by deal requirements Evaluates options and resolves internal priorities. ▪ Closes new business deals by coordinating requirements; developing and negotiating contracts; and integrating contract requirements with business operations. ▪ Protects organization's value by keeping information confidential. ▪ Enhances organization's reputation by accepting ownership for accomplishing new and different requests. ▪ Explores opportunities to add value to job accomplishments. ▪ FPO formation & Operationalization.
9	Marketing Officer	<ul style="list-style-type: none"> ▪ Builds market position by locating, developing, defining, and closing business relationships. ▪ Tracks individual contributors and their accomplishments. ▪ Locates or proposes potential business Deals by contacting potential partners. ▪ Discovers and explores business opportunities. ▪ Screens potential business deals by deal requirements. Evaluates options and resolves internal priorities. ▪ Closes new business deals by coordinating requirements; developing and negotiating contracts; and integrating contract requirements with business operations. ▪ Protects organization's value by keeping information confidential. ▪ Enhances organization's reputation by accepting ownership for accomplishing new and different requests. ▪ Explores opportunities to add value to job accomplishments. ▪ FPO formation & Operationalization
10	Office Manager	<ul style="list-style-type: none"> ▪ To ensure human resource management of staff; ▪ To ensure documentation management, utility management, financial system management (audit, accounts, payments); ▪ To ensure IT system operations; ▪ To assist in preparation of budget, utilization reports, monthly financial MIS and tender documents; ▪ To maintain proper records, accounts and submission of reports; ▪ To attend to any work that may be assigned from time to time. ▪ Any other work assigned by Project Director
11	Manager (HRD)	<ul style="list-style-type: none"> ▪ All HR related activities of the project. ▪ To conduct workshops, seminars, conferences. ▪ Training and capacity building of project staff including recruitments.

Sl. No.	Name of Post	Job Description
		<ul style="list-style-type: none"> Any other work assigned by Project Director.
12	Office Manager-cum-Accountant	<ul style="list-style-type: none"> To ensure human resource management of staff To ensure documentation management, utility management, financial system management (audit, accounts, payments) To ensure IT system operations To assist in preparation of budget, utilization reports, monthly financial MIS and tender documents. To maintain proper records, accounts and submission of reports To maintain cash book, ledgers and allied documents To handle & maintain records relating to establishment To handle office store and stock To handle bank account, reconciliations, taxes/ vats etc. To assist in audit, accounts and payments To assist in handling of tender documents To attend to any work that may be assigned from time to time
13	Accountant	<ul style="list-style-type: none"> To maintain cash book, ledgers and allied documents To handle & maintain records relating to establishment To handle office store and stock To handle bank account, reconciliations, taxes/ vats etc. To assist in audit, accounts and payments To ensure IT system operations To assist in handling of tender documents To maintain proper records, accounts and submission of reports To attend to any work that may be assigned from time to time
14	Computer Assistant	<ul style="list-style-type: none"> To ensure IT system operations. To assist in preparation and typing of budget, utilization reports, monthly financial MIS and tender and allied documents To make requisite entries of MIS & GIS data To assist in maintaining proper records, accounts and submission of reports To attend to any work that may be assigned from time to time
15	Office Assistant	<ul style="list-style-type: none"> Perform Clerical Duties Perform other administrative support tasks including updating, sorting files, drafting & proof reading, correspondence Maintain financial database account Maintain stock of supplies by anticipating work requirements, ordering supplies and distributing as per necessity Types correspondence, meeting notes and forms among other components Any other work assigned

Sl. No.	Name of Post	Job Description
16	MIS /GIS Operator	<ul style="list-style-type: none"> ▪ Data collection from the different sections and field offices. ▪ Conduct systematic implementation of the MIS application through SPMU, DPMUs and BPMUs. ▪ Maintain the data updating in MIS application and other formats or modules and database. ▪ To coordinate with other officials for data integration. ▪ To Assist in procurement through GeM portal and E-procurement website and uploading of e-Tender. ▪ Take regular back up of different computers, web applications and database ▪ To handle plotter/scanner (large format) ▪ To maintain stock register for ICT/IT items ▪ To update project website on regular basis. ▪ Any other work related to project assigned time to time.
17	Office Attendant	<ul style="list-style-type: none"> ▪ To carry and deliver the dak within and outside the office; ▪ To ensure cleanliness and general upkeep of office and of the furniture, fixture and equipment wherein posted; ▪ To perform miscellaneous job related to routine office work for officers/officials; ▪ To keep watch and ward and to take precautionary measures relating to prevention of fire, theft and damage to Government property; ▪ To attend to any work that may be assigned from time to time.
18	Construction Engineer	<ul style="list-style-type: none"> ▪ Preparation of survey maps and tender documents ▪ Preparation of estimates of minor irrigation schemes, water harvesting structures (WHS), access roads etc. ▪ To execute and recording of measurements of works ▪ To maintain proper records, accounts and submission of reports. ▪ Technical scrutiny of estimates ▪ Supervision and quality control of construction works. ▪ To ensure full utilization of created irrigation potential. ▪ To prepare sub-project wise development plans. ▪ To attend to any work that may be assigned from time to time.
19	Design Engineer	<ul style="list-style-type: none"> ▪ To prepare sub-project wise development plans. ▪ Preparation of detailed design and engineering estimates of minor irrigation schemes, WHS, access roads etc. ▪ Preparation of survey maps and tender documents. ▪ To inspect and test check measurements of works. ▪ To maintain proper records, accounts and submission of reports ▪ Technical scrutiny of estimates ▪ quality control of construction works ▪ To ensure full utilization of created irrigation potential ▪ To attend to any work that may be assigned from time to time

Sl. No.	Name of Post	Job Description
20	Head Draughtsman	<ul style="list-style-type: none"> ▪ To assist in preparation of sub project-wise development plans ▪ To prepare/check drawing estimate of minor irrigation schemes, WHS, access roads etc. ▪ To prepare/ check, L- Section, cross section etc. ▪ To prepare tender documents. ▪ To execute and record of measurements of works. ▪ To maintain proper records, accounts and submission of reports. ▪ To attend to any work that may be assigned from time to time.
21	Junior Draughtsman / TA (Drawing and Estimates).	<ul style="list-style-type: none"> ▪ To assist in preparation of sub project-wise development plans ▪ To prepare drawings, estimates of minor irrigation schemes, WHS, access roads etc. ▪ To prepare, L-section, cross sections etc. ▪ To prepare of tender documents ▪ To maintain proper records, accounts and submission of reports ▪ To attend to any work that may be assigned from time to time
22	Draughtsman	<ul style="list-style-type: none"> ▪ To assist in preparation of sub project-wise development plans. ▪ To prepare drawing estimate of Minor irrigation schemes, WHS, Access roads etc. ▪ To Prepare, L- Section, Cross section etc. ▪ To prepare of tender documents. ▪ To execute and recording of measurements of works ▪ To maintain proper records, accounts and submission of reports ▪ To attend to any work that may be assigned from time to time
23	Junior Engineer	<ul style="list-style-type: none"> ▪ To prepare sub-project-wise development plan. ▪ Preparation of estimate of minor irrigation schemes, WHS, access roads etc. ▪ Preparation of survey maps and tender documents. ▪ To execute and record measurements of works. ▪ To maintain proper records, accounts and submission of reports. ▪ Technical security of estimates. ▪ Supervision and quality control of construction works. ▪ To ensure full utilization of created irrigation potential. ▪ To attend to any work that may be assigned from time to time.
24	Surveyor	<ul style="list-style-type: none"> ▪ Assist in preparation of sub- project wise development plans. ▪ Conduct field survey for preparation of estimates of minor irrigation schemes, WHS, accessroads etc. ▪ Prepare all kinds of survey and allied maps, L-section, cross sections etc. ▪ Assist in preparation of tender documents and execution of works ▪ Maintain proper records, accounts and submission of reports ▪ Attend to any work that may be assigned from time to time.

Sl. No.	Name of Post	Job Description
25	Supervisor	<ul style="list-style-type: none"> ▪ To assist in preparation of sub-project-wise development plans ▪ To conduct day to field supervision of minor irrigation schemes, WHS, access roads etc. ▪ To assist the field staff in surveying etc. ▪ To assist in preparation of tender documents and execution works ▪ To maintain day to day proper records, accounts and submission of reports ▪ To attend to any work that may be assigned from time to time
26	IT Expert	<ul style="list-style-type: none"> ▪ Conduct the data collection from the different sections and field offices. ▪ Organize, analyze and represent data. ▪ Maintain the quality of data. ▪ Coordinate with the software development agency to monitor the progress of outsourced work related to the development and AMC. ▪ Conduct systematic implementation of the MIS application through SPMU, DPMUs and BPMUs. ▪ Maintain the data updating in MIS application and other formats ▪ Coordinate with other officials for data integration. ▪ Carry out daily activities from record update to report generation. ▪ Organize training and capacity building for field officers. ▪ Assist and submit updated information to the Division Head in Management and supervision of the activities. ▪ Assist in procurement of IT related equipment
27	Surveyor/ Technical Assistant (Survey)	<ul style="list-style-type: none"> ▪ To assist in preparation of sub-project-wise development plans ▪ To conduct field survey for preparation of estimates of minor irrigation schemes, WHS, access roads etc. ▪ To prepare all kinds of survey and allied maps, L-section, cross sections etc. ▪ To assist in preparation of tender documents and execution of works. ▪ To maintain proper records, accounts and submission of reports, ▪ To attend to any work that may be assigned from time to time,
28	Technical Assistant (Drawing & Estimation)	<ul style="list-style-type: none"> ▪ To assist in preparation of sub-project wise development plans; ▪ To prepare drawings, estimates of minor irrigation schemes, WHS, farm access roads, etc. ▪ To prepare, L-section, cross sections etc. ▪ To prepare of tender documents; ▪ To maintain proper records, accounts and submission of reports; ▪ To attend to any work that may be assigned from time to time.
29	Driver	<ul style="list-style-type: none"> ▪ To drive and maintain the vehicle in good condition ▪ To maintain logbook and related document of the vehicle ▪ To carry out/attend the minor repairs/faults

Sl. No.	Name of Post	Job Description
30	Night Watchman	<ul style="list-style-type: none"> ▪ To keep watch & ward and to take precautionary measures relating to prevention of fire, theft and damage to Project's property. ▪ To carry and deliver dak within and outside of the office if required. ▪ To ensure the cleanliness and general upkeep of office wherein posted and of the furniture, fixtures and equipment. ▪ To perform miscellaneous job related to office routine work for officers/officials. ▪ To attend to any work that may be assigned from time to time.
31	Office Upkeep	<ul style="list-style-type: none"> ▪ To sweep and mop the floors of the office; ▪ To dust and clean tables/ chairs, etc. and allied accessories / equipment. ▪ Any other work.
32	MIS/GIS Technician	<ul style="list-style-type: none"> ▪ Assist in maintaining systems, GIS/MIS operations at all levels, ▪ Computer generated analytical GIS maps, MIS reports, software inventory and maintenance ▪ Data collection from the different sections and field offices. ▪ Conduct systematic implementation of the GIS application through SPMU, DPMUs and BPMUs. ▪ Maintain the data updating in GIS application and other formats or modules and database. ▪ To coordinate with other officials for data integration. ▪ Take regular back up of different computers, web applications and database ▪ To handle plotter/scanner (large format) ▪ Any other work related to project assigned time to time.
33	Factory workers (3 + 1)	<ul style="list-style-type: none"> ▪ To prepare fruiting mixture for block Carryout autoclaving and inoculation of Blocks. ▪ To operate fork lift and tractor loader.

2.2 Recruitment of Personnel:

The procedures for selection of officers / staff (Class-I & II) will be as under:

2.2.1 Project Director:

In case of selection to the post of Project Director, the process will be initiated by the Principal Secretary, Agriculture, GoHP after getting recommendation from Department of Agriculture, GoHP.

2.2.2 Officers and Staff:

- The process for selection and filling up the posts will be initiated at least 3 months before the expiry of the period of service of the existing incumbent (s).
- Project Director shall initiate the process by seeking from the Head of the Department concerned a panel of names are to be posted on secondment or deputation to the PMU.

- Project Director shall forward the panel to the administrative department for placing the officer on secondment to the PMU.
- The initial period of transfer on deputation of the officers / staff shall be for three years but GoHP may extend it by another two years on the recommendation of the Project Director depending upon the performance of the incumbent (s).
- The Project Director is also empowered to transfer / re-deploy Class- I and Class- II staff within the PMU or repatriate them before completion of tenure to the respective parent departments with the prior approval of the Executive Committee.

2.2.3 Subordinate Staff:

- The selection of regular subordinate staff shall be done by a committee comprising of Project Director as the Chairman, District Project Managers as Members and Deputy Project Director (Soil and Water Conservation) as the Member Secretary.
- The Project Director is also empowered to transfer / redeploy subordinate staff within the project or to recommend repatriation of the staff before completion of tenure to the respective parent departments.

2.2.4 Contractual Outsourcing of Personnel:

The PMU is empowered to seek replacement of the personnel provided by the outsourced agency who are not performing as per expectations. The performance of the outsourced personnel shall be reviewed periodically.

2.2.5 General Conditions of Service:

Officers and staff on secondment basis to the PMU from other departments of GoHP shall be governed by the Fundamental Rules and Supplementary Rules (FR & SR) / other service rules as applicable to employees of GoHP.

2.2.6 Code of Public Behavior:

All officers and staff working in the PMU are under obligation to observe confidentiality, impartiality and discipline similar to that required from civil servants. Employees shall not, in the performance of their duties, engage in political or religious propaganda, etc.

2.2.7 Performance Appraisal System:

The Annual Confidential Report for all officers and staff in the PMU deputed from GoHP shall be initiated by the authorized officers (BPM in case of BPMU, DPM in case of DPMU and PD in case of SPMU). The appraisal shall be reviewed and accepted by the next higher competent authority in the hierarchy as per the existing rules and procedures of the State Government in this regard.

2.3 Disciplinary Matters:

2.3.1 Officers and Staff Deputed from DoA:

The Project Director will initiate an enquiry against any delinquent officers/staff and submit the

enquiry report to the Head of the Department to take suitable action in case of Non-Gazetted officers deployed from DoA. In case of Gazetted officers, the Head of the Department will forward the case to the appointing authority with his recommendations.

2.3.2 Officers and Staff Deployed through Outsourced Agency:

For officers and staff provided by an outsourced agency the Project Director is empowered to take appropriate action if their performance is not satisfactory. All inquiries will be conducted in a time bound manner.

2.4 Capacity Building Interventions:

For all the staff of the PMU to understand and have proper appreciation of the Project and obtain knowledge / skills required for smooth execution of their respective tasks, regular trainings, field visits will be organized by the PMU.

2.4.1 Trainings:

Training programs will be designed based on the Training Needs Analysis (TNA) so that contents, modules and training curriculum currently meet the needs of the trainees concerned. Resource persons can be hired by the PMU for training sessions from within and outside the State. For providing training, the concept of 'Training of Trainers' will be adopted.

2.4.2 Field Visits:

Field visits for selected PMU staff members will be conducted from time to time during the project period. These tours will be planned and undertaken under the initiatives of the PMU. These field visits will consist of visits to other schemes relevant to the Project within or outside the State to share experiences and learn relevant lessons.

2.4.3 Overseas Exposure Visits:

The officers and staff of PMU and DoA, who are directly engaged in implementation of the Project will be eligible for overseas training / exposure tours to acquaint with the latest irrigation and other related farm technologies. The officers and staff will be deputed on overseas training / exposure visits as per the regulations of GoHP and after obtaining necessary approval of JICA, New Delhi office.

2.5 Project Management Consultant:

To reinforce the implementation capacity of the PMU, as well as, to ensure technical assistance and quality control of the Project, a team of consultants will be procured by the PMU and will be referred to as Project Management Consultant. The PMC will assist the PMU in improvement of processes and procedures for project implementation at the state, district and block levels. The scope of work of the PMC will be determined by the PMU in consultation with JICA. A sample Terms of Reference for the PMC is provided in Attachment 10 of the Memorandum of Discussions dated 1 October 2010 among the Ministry of Agriculture, Government of India, Department of Agriculture, GoHP, and JICA.

3. PROJECT IMPLEMENTATION ARRANGEMENT

The objective of the HPCDP-II is to promote sustainable crop diversification to high value crops and enhance farmers' bargaining power by development of production infrastructures such as irrigation facilities, access farm roads, farmers' support, institutional development as well as marketing development, thereby contributing to improvement of farmers' income in all districts of Himachal Pradesh.

3.1 Approach:

Crop Diversification for Raising the Income of Farmers:

In order to achieve the 'Project Goal' which is to raise the income of farmers by improving the profitability of agriculture, the Project envisages to promote crop diversification. Crop diversification is a two-fold approach; from the macro perspective, being a hilly state food security is a crucial issue, therefore, the productivity of cereals shall be increased at first and the farmland is diverted from cereals to profitable vegetables without decreasing the production of cereals. At micro level, farmers shall be empowered with marketing skills as well as cultivation skills and encouraged for diversification for better profit realization by cultivation of off-season vegetables, introducing high value crop and/or changing way of post-harvest handling and marketing.

Empowerment of Farmers Organization for Marketing

In addition to strengthening farmers' capacity through crop diversification, the Project will encourage farmers/farmers groups to organize Farmer Producer Organization (FPO) to obtain larger bargaining power for marketing. 10 FPOs will be formed under the Project. The Project will support FPOs in terms of i) business management skills, ii) infrastructure development and iii) financial access. As an independent business entity, FPOs prepare their business plan, viz. Supply Chain and Market Development Plan with business skills development support from the Project. Based on the plan 'Collection Centres' will be established. 'Collection Centres' will function as an interface between distribution and production and be utilized for post-harvest processing. The Project will also provide soft loans to FPOs for processing food grains, vegetables and processed products.

3.2 Fundamentals of Farmers' Participation in the Project:

Ownership: It is in the best interest of Project and community when each member of the village community takes full and effective participation in the project. The community can display its strong sense of ownership by agreeing to share project costs by contributing time and money for various Project activities.

Accountability: All members and Self-Help Groups/Farmers Interest Groups should participate to implement decisions taken by the KVAs. It must be understood that the KVAs have been formed to represent the community, not to replace them. Therefore, they must honour the priorities of the community and work towards meeting their needs. Further, it shall be the responsibility of the KVAs management committee to keep everyone well informed on all developments and decisions and consult the community regularly on major issues.

Transparency: All proceedings and records of the project shall have to be made accessible to all. This shall be the joint responsibility of the KVA and the Community Motivator. All transactions should be recorded immediately. Both these requirements will ensure a high level of trust among

the community members on each other. Some specific provisions to ensure complete transparency are: Display of the annual physical and financial achievements through wall writing/ paintings on a public place, which is accessible to all.

Cost-effectiveness: The project money belongs to the community and everyone has to treat it that way. Best quality has to be achieved through least expenditure. Savings may be ensured in purchase of goods, in negotiating with a contractor, or through better management of implementation plans. However, at no point, quality of the work or material should be compromised.

Participation of disadvantaged groups: Care must be taken that the disadvantaged groups are profited equally from this project. The KVA will also incorporate provisions to benefit women, the poor, landless labourer's, marginal farmers, members of the Scheduled Castes and Tribes etc. Social equity shall be cornerstone of this project.

3.3 Project Framework:

The main activities included in each component are organized as shown in the figure below.

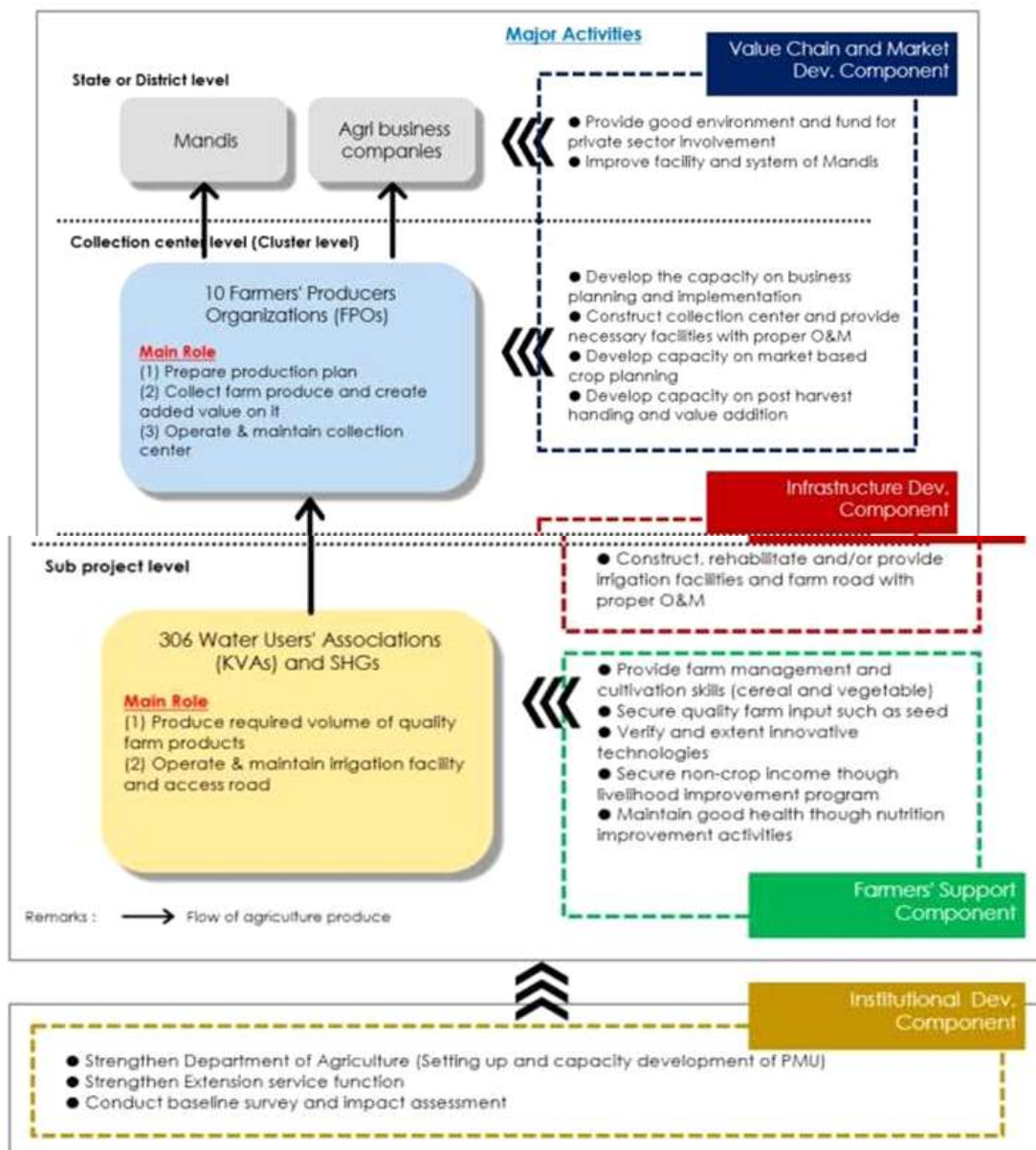


Figure 3: Project Framework

3.4 Infrastructure Development Component:

3.4.1 Infrastructure Development for sub-projects

3.4.1.1 Minor Irrigation:

The basic strategy for ‘irrigation development’ will focus on, development of minor irrigation systems, improvement of existing irrigation system, development of small-scale irrigation facilities, efficient water management and rainwater harvesting. Number of sub-projects will be 306 which consist of 296 sub-projects from short list and 10 sub- projects from convergence components with Water Resources Department (Jal Shakti) /Soil Conservation/Rural Development Department.

Components of each sub-project are fixed on the basis of necessities in the preparatory survey and are verified by the DoA and Project Staff when the investigations for selection of sub-projects were conducted.

These fixed components are: Water Harvesting Structure, Percolation Well, Pump House, Protection Work/Spur, Pumping Machinery, Tube Well, Rising Main, Main Delivery Tank, Distribution System (HDPE Pipeline), Outlet Chamber, Sluice Valve Chamber, Nallah (Surface Water) Crossing/Road Crossing, Retaining Wall, Diversion Weir, Intake Chamber, Main Channel, Pucca Field Channel, Storage Tank, Supply of Power, Sump well, Fencing, Gate, Dropping Structure, Dyke, Water Measuring Devices.

DPR Guidelines prepared by the PMC duly approved by the HPCDP need to be adhered to while preparing the Detailed Project Report by the agency to whom the task of DPR preparation is contracted. The DPR is required to be scrutinized by following the guidelines issued by PMC for survey and investigation, design criteria, planning and design.

The PMC has also issued guidelines for procurement of works contracts and for construction management, quality control and quality assurance. The following key points are to be kept in mind while planning, designing and execution of the subproject irrigation systems:

1. Survey & Investigation
2. Planning and Design
3. Procurement of work contracts
4. Construction management and
5. Quality Control and Quality Assurance.

3.4.1.2 Micro Irrigation System:

Micro-irrigation system will be installed in 276 ha in lift irrigation and tube well irrigation systems and 560 ha in flow irrigation systems however; it may be interchanged as per actual needs and feasibility.

At the time of installation of MIS, expected crop, size of field and needs of water storage tank or booster pump etc., shall be checked with service provider, extension officer/ junior engineer and farmers. Please refer to MoD-Attachment 2-Table 1.1.4 for district wise projection of Micro-Irrigation System.

Selection Criteria

Selection Criteria of Farmers for installation of Micro Irrigation System schemes under the Project:

- The farmers should have willingness to take up vegetable cultivation.
- The farmers should agree to share the MIS with other farmers.
- The farmers should take responsibility for O&M with their own resources.

The PMC has issued guidelines for survey and investigation, design criteria, planning and design, Project Formulation (DPR formulation), execution management and operation of the micro irrigation schemes those need to be adhered to by the service providers, contractors and DPMU and BPMU to ensure its compliance. The following points to be kept in mind:

1. Survey & Investigation
2. Planning and Design
3. Procurement of work contracts
4. Construction management and
5. Quality Control and Quality Assurance.

3.4.1.3 Catchment Area Treatment:

To help recharging of the streams/nallahs as perennial source of water for irrigation throughout the year, 189 Wire Crates and 204 Silt Retention Structure will be provided as per need.

District wise projections of Catchment Area Treatment are as follows:

Table 3.1: District-wise Projections of Catchment Area Treatment

Catchment Area Development	Districts						
	Bilaspur	Chamba	Hamirpur	Kangra	Kinnaur	Kulu	Mandi
Wire Crates No	12	13	15	38	2	20	38
Silt retention structure No	16	10	22	50	1	10	44
Districts							
Item	Lahaul/Spiti		Shimla	Sirmour	Solan	Una	Total
Wire Crates No	9		17	5	15	5	189
Silt retention structure No	10		14	6	14	7	204

The targets may be interchanged as per feasibility & actual requirement.

The PMC has issued guidelines for survey and investigation, planning and design, formulation of detailed project report for Catchment Area Treatments. Those are to be adhered to while taking up these activities. Main technical aspects to be taken in to account are:

1. Survey & Investigation
2. Planning and Design
3. Procurement of work contracts
4. Construction management and
5. Quality Control and Quality Assurance.

3.4.1.4 Provision of Solar Powered Pumping Machinery for Lift Irrigation and STW:

Solar PV system will be installed in the pumping machinery to 83 LIS and STW sub-projects for lifting water (Out of 103 subprojects of LIS and STW). Actual number shall vary depending upon the feasibility and also limitations such as land availability for solar panel etc.

The PMC has prepared guidelines for Solar Powered Pumping Machinery for Lift Irrigation and STW. The following features of these guidelines are mentioned here to be complied with:

1. Survey & Investigation
2. Planning and Design
3. Procurement of work contracts
4. Construction management and
5. Quality Control and Quality Assurance.

3.4.1.5 Farm Access Roads:

Poor condition of roads is one of the major constraints in smooth diversification as the labor cost for carrying the produce from farm to road head increases. Timely transportation of farm produce, from the producing area is a key for harvesting profits from farm produce Therefore; it is proposed to construct/rehabilitate 62.4 kms farm access roads. However, actual length may vary after DPR preparation.

Table 3.2: District-wise Projections of Farm Access Road Length

District	Bilaspur	Chamba	Hamirpur	Kangra	Kinnaur	Kullu	Lahaul & Spiti
Access Farm Road (km)	2.35	7.6	0.6	27.2	0	3	0
District	Mandi	Shimla	Sirmour	Solan	Una	Total	
Access Farm Road (km)	4.75	10	1	5	0.9	62.4	

Source: DOA (The length of Farm Access roads may be vary as per feasibility & actual needs.)

The PMC has formulated the guidelines for the Farm Access Roads focusing on survey and investigation, planning and design, detailed project report preparation, procurement of contractors, construction management, construction supervision, quality control mechanism and activity completion report. The following points are to be taken in to account:

1. Survey & Investigation
2. Planning and Design
3. Procurement of work contracts
4. Construction management and
5. Quality Control and Quality Assurance.

3.4.1.6 Construction and monitoring checks are shown in the flow chart below:-

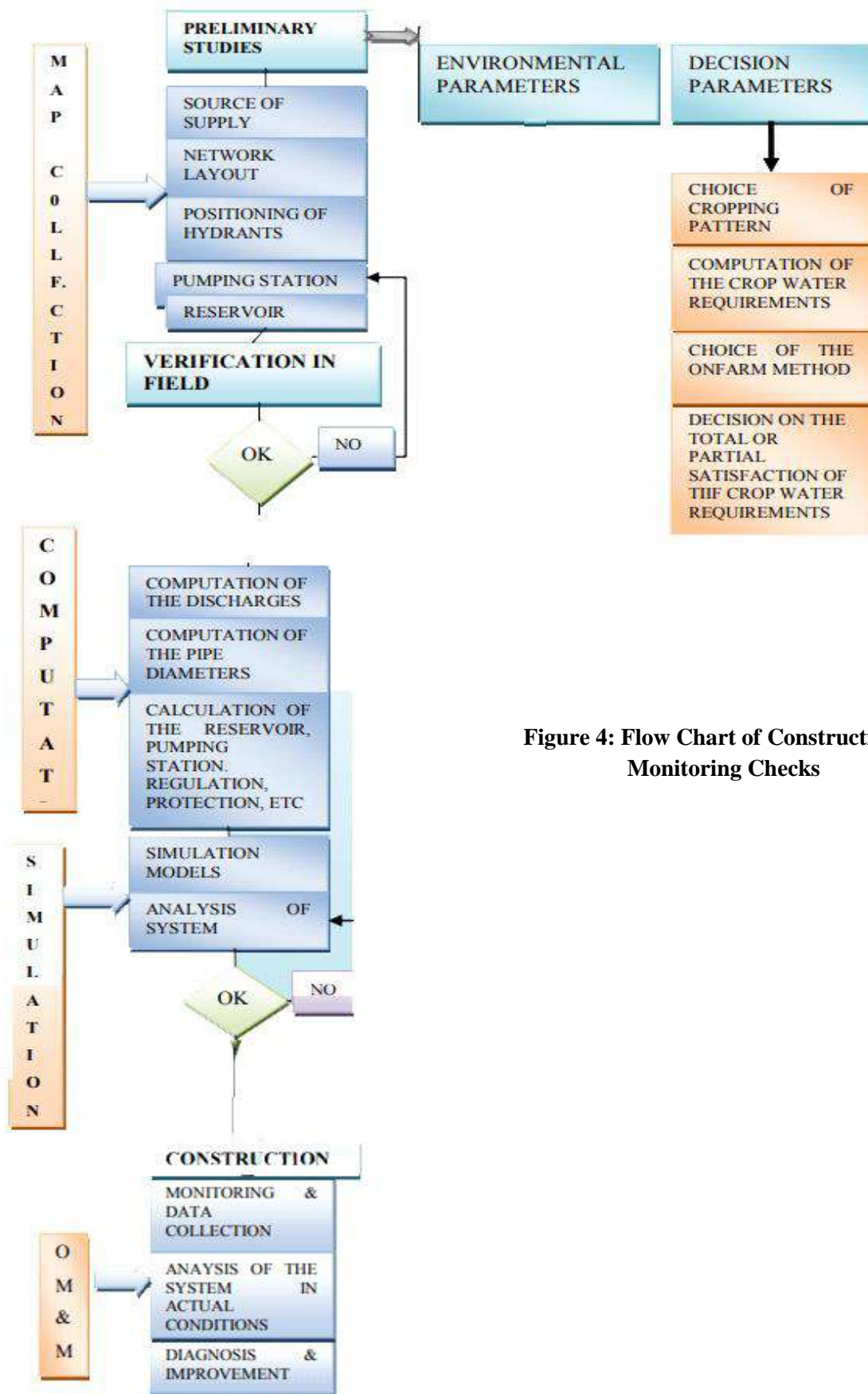


Figure 4: Flow Chart of Construction & Monitoring Checks

3.4.1.7 Implementing Procedure of Minor Irrigation, Farm Access Road and Catchment Area Treatment Component

The implementation procedure for minor irrigation and farm access roads shall be as under:-

1. After studying feasibility, survey, investigation and DPR preparation shall be done either by the project or by the service agency in consultation with KVA/farmers of the area.
2. The DPRs shall be technically scrutinized, recommended and approved by Superintending Engineer (DoA)/PMC.
3. The A/A & Expenditure Section (ES) shall be accorded by the Project authorities as per delegation of powers.
4. E-Tenders shall be invited from contractors through LCB as the cost of such works is low and works shall be awarded to the L1. Checking of Works for efficiency and quality works may be planned and expedited.
5. The project shall ensure completion of works in a given time and if the contractor fails to execute the work, penalty shall be imposed.
6. The quality of works and material used shall be the responsibility of implementing agency and PMC and in case of substandard work, the matters shall be reported to the DPM and if required, then to Project Director. Immediate order to stop the works should be given before further necessary action is taken to rectify the lapses.
7. After the works are completed and tested, PCR shall be prepared by BPM/DPM with the assistance of PMC.
8. Defect liability period shall be kept for a period defined in the tender document.
9. After completion & testing of the Minor irrigation scheme, Farm Access Roads and catchment treatment infrastructure so created shall be handed over to KVA for O & M.

Procedure and Executor

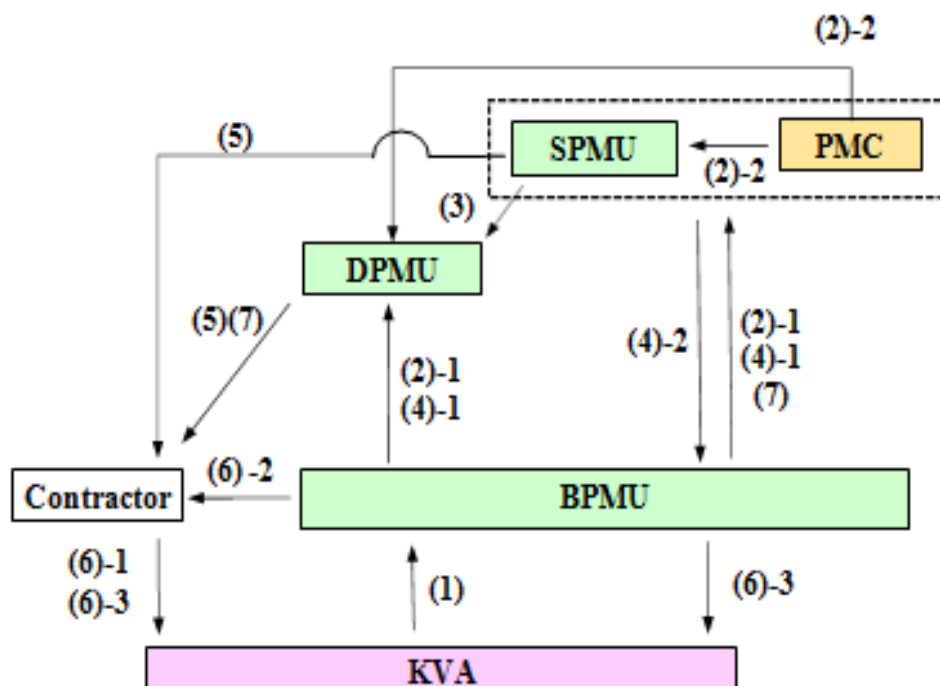


Figure 5: Implementing Procedure of Minor Irrigation, Farm Access Road, and Catchment Area Treatment

Implementation Procedure for Minor Irrigation, Micro Irrigation, Catchment Area Treatment and Solar Powered Pumping Systems

Table 3.3: Implementation Procedure

No	Paper Procedures		Required Period	Executor	Assisted by	Remarks
(1)	Application Form	Preparation	1 month	Farmers		Already done
		Approval		BPMU of Phase-1/SDSCO		Already done
(2)	Minimum Project Report (MPR)	Preparation	1 month	BPMU of Phase-2/SDSCO		Already done
		Evaluation		SPMU of Phase-1		Already done
(3)	Selection of Sub-project			SPMU of Phase-1		Already done
(4)	Detailed Project Report (DPR)	Preparation	3 months	BPMU	PMC	Survey/Design
		Approval	2 months	SPMU	PMC	
(5)	Tender	Notice Inviting Tender	1 month	DPMU		e-tendering
		Evaluation	1 month	DPMU	PMC	
		Issue of Award Letter	1 month	(Less than 90 lakhs SMPU) (Less than 2.50 Cr)		work order
(6)	Construction	Construction	12 months as per the work	Contractor		dry season
		Supervision	-	BPMU/DPMU	PMC	
		Completion Certificate	-	BMPU/ Contractor/ KVA	DPMU/ PMC	
(7)	Project Completion Report (PCR)	Preparation	2 months	BPMU		
		Approval		SPMU	PMC	

Note-

1. Award Letter (work order): Items, Rate and Total amount, Construction Deadline etc. are included
2. In MPR, CCA, location, farming families, willingness of farmers, cropping pattern, verify the source of water are confirmed.
3. Defects of minor irrigation facilities, farm access road and catchment area treatment are warranted by contractor for a period defined in the tender document.
4. Pre-Qualifications (P/Q) are not carried out.

3.4.1.8 Solar / Electric Fencing for Protection of Vegetables on Cost Sharing

Project will encourage beneficiaries to install Solar/Electric Fencing/ Chain Fencing with Angle Iron/Chain Fencing with RCC Poles/Composite Fencing with welded mesh and solar power system/Barbed Wire Fencing with Angle Iron/Barbed Wire Fencing with RCC poles, etc. to minimize risk of crop damage by wild animals on cost sharing basis.

3.4.1.8.1 Implementation:

The programme will be implemented by the DPMs in 12 districts through 15 BPMs as Project Implementing Agency (PIA).

Guidelines for Installation of Fencing for Protection on cost sharing.

1. The guidelines (design, estimate & subsidy pattern), of Mukhya Mantri Khet Sanrakshan Yojna of DoA/ MoD will be followed.
2. The group of farmer's/ community shall be given priority for installation of fencing. As it shall be more cost effective if beneficiaries install the fencing on community basis as a group rather than for small and scattered land holding. Therefore, the project will encourage beneficiaries to install as a group (minimum 3 farmers).
3. The farmer's group/ community should agree to deposit farmer share according to the type of fencing before the installation/ as per the guidelines.
4. The beneficiary farmers should take responsibility of O&M from his own expenses.
5. Preference/ priority will be given to the advanced farmers.
6. Type of fencing to be installed shall depend upon the feasibility and choice of farmer's group irrespective of the target given in APO.
7. The application for installation of fencing shall be taken through the respective KVA after their recommendation on the given criteria.

The BPM and his/her team will identify and delineate areas in their respective jurisdiction those are prone and vulnerable to crop loss by stray, wild animals and monkey menace. It was seen that the farmers in those areas are abandoning agriculture and are migrating for their livelihood to other sectors. Therefore, priority should be given to the farmers of those areas for availing project assistance, so that they can continue in farming sector.

The BPMUs will convene one day meeting-cum-workshop in the beginning of the year involving all the stakeholders. During workshop, presentation will be made on operational guidelines, physical and financial targets fixed for the relevant year. The expenditure for organizing one day meeting-cum-workshop may be met out from the project funds. Targets may be fixed sub-project-wise on the basis of information generated. The proceedings of these workshop/meeting shall be sent to the DPMU forthwith. The BPMU will also organize awareness campaign at focal points sub project areas and educate farmers about the project details. During the awareness campaign, the willing farmers may be provided the prescribed application forms and necessary guidance as to how they can avail project assistance. Then the application will be collected from willing farmer groups to install Solar Electric Powered Fencing Systems for availing project assistance along with supporting revenue papers with the concerned BPMU on prescribed application form (Annexure-I). Please refer Annexure II – format to be filled in to obtain the Administrative Approval of Solar Electric Power Fencing Sub Component. Farmers shall have to submit an undertaking in the shape of self-attested affidavit on judicial paper with regard to maintenance of the fence regularly and declare that 'we shall be solely responsible for any death or damage to humans, animals or property due to mismanagement of the solar power fencing/solar electric powered fencing' (Annexure-III). The prescribed application forms shall be made available in all the offices of the BPMU/Satellite offices. Farmers can submit applications to the Extension Officer of the area after recommendation of KVA in the Satellite offices

Preference should be given to cover whole of CCA or most vulnerable portion of it followed by group of farmers and lastly the individual farmers. Since revenue paper is already obtained, it shall

be already prepared by the BPMU along with ownership of land, verification of the claims of land of the beneficiaries shall be made by Extension Officer and BPMs concerned.

3.4.1.8.2 Implementation Process:

In case of provision of micro irrigation system and solar fencing, BPMU select empanelled service provider in DOA and the service provider conduct field survey, identify needed material to be installed to correspond with the field condition, and prepare cost estimate. After approval of those documents by DPMU, DPMU will issue award letter to service provider for implementation. The service provider has responsibility on installation of the micro irrigation system and solar fencing. The procedure is summarized as follows.

The PMC will monitor the supervision of installation of Micro Irrigation System since Extension Officer does not have engineering background and sometimes it is hard to judge whether or not Micro Irrigation System have installed properly.

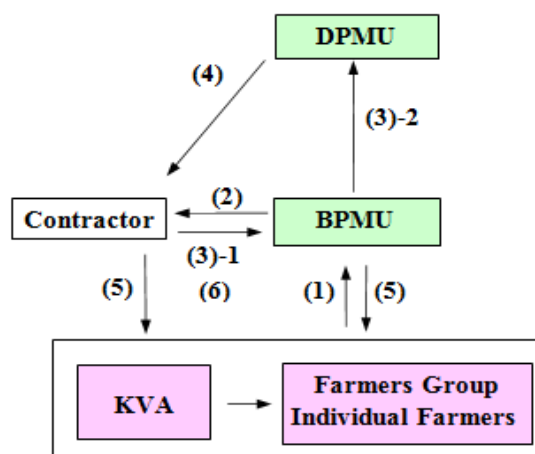


Figure 6: Implementing Procedure of Provision of Solar Fencing

3.4.1.8.3 Forms and Proforma

Please refer to Annexure IV – Agreement between farmers and selected firm / company (service provider) for the installation of Solar Electric Powered Fencing in Farms Annexure V is the proforma for maintaining beneficiary wise record under solar / electric fencing subcomponent. Annexure VI – Authorization Letter Annexure VII – Certificate from Farmers for release of 90% amount of project contribution Annexure VIII: Proforma for Furnishing Monthly Progress Report under Solar Electric Power Fencing subcomponent Annexure IX – Proforma for Furnishing Quarter Progress Report under Solar Electric Power Fencing Sub Component.

Table 3.4: Procedure and Executor

No.	Paper Procedures		Required Period	Executor	Assisted by	Remarks
(1)	Application Form	Preparation	1 month	KVA/Farmer Group	-	Farmers who apply for fencing are selected & approved by KVA
		Approval		BPMU	-	

(2)	Selection of Service Provider	-	2 week	BPMU/ Farmers Group	-	
(3)	Design and Cost Estimation	Preparation	1 month	Service Provider	-	Estimate, plan, Feasibility Report, Agreement between Farmers and Service Provider
		Approval		DPMU	-	
(4)	Award Letter(Work Order)	-	2 week	DPMU	-	
(5)	Installation	Installation	1 month	Service Provider	PMC	
		Supervision		BPMU	PMC	
		Completion Certificate		BMPU/ Service Provider/KVA, Farmers Group		
(6)	Preparation	2 months		Service Provider		
	Approval			DPMU		

3.4.1.8.4 Roles and Responsibility of Block Project Manager (BPM):

BPM will be assisted by Junior Engineer (JE), Agriculture Extension Officer (AEO) etc. and this core team shall be responsible for the following:

- After receipt of the application on prescribed form from the beneficiary group, the same shall be entered in the Register and the serial number with date of receipt shall be written on that application.
- The selected firms/ companies will prepare the detailed cost estimate as per prevailing site need and requirements and will submit to concern BPM for verification.
- The BPM and his/her team will visit the site to verify the feasibility within 10 days from the receipt of application and will finalize the site. The selection of fencing may be decided in consultation with the service provider and farmers concerned. In case, some site development is required, then the farmers will be guided accordingly and the farmers are required to provide weed/ tree, free levelled field site to the selected company for installation of the fencing at the time of signing of agreement.
- The BPM and his/her team will recommend or reject the application after inspection of the said site. In case the site is found suitable, then the team will record details as per Annexure -II and will forward the same to the Project Sanctioning Authority (DPMU) for administrative approval along with detailed cost estimate of Fencing as the case may be within 10 days after inspection.
- DPM will exercise 100% test check during different phases of the execution of the project components. However, it is mandatory for BPM to undertake the following: -

- Verification of developed site before signing the agreement or initiation of construction work after the receipt of sanction.
- Verification and certification of construction material dumped at the site for installation of Fencing
- Test check and completion report within 10 days after the commissioning of systems.
- Ensure submission of all bills/vouchers within 5 days after completion report.
- If the farmer groups want to avail the loan facility to meet out the expenditure on account of their share, then the necessary facilitation shall be provided by the BPMU for formulation of project report for bank finance.
- BPM and his/her team/concerned KVA shall be responsible for quality control of construction, use of specified construction material and for timely construction of structure to ensure timely utility by the beneficiary.
- Ensure submission of claims of project assistance along with photograph of fencing systems with farmers.
- The project assistance to be recommended on the actual cost basis. The project assistance be worked out in accordance with awarded cost and norms. The payments to the concerned service providers shall be made on actual measurement basis as per the prevailing site duly verified by the BPM concerned.
- Ensure timely submission of project completion reports on the prescribed format by the farmer group after inspection or joint inspection in case where bank loan is availed.
- Submission of progress reports to the DPM and SPMU every month on prescribed format as per Annexure-VIII & IX.
- BPMU will have to maintain beneficiary- wise record as per Proforma-V.

3.4.2 Crop Diversification through Convergence in Created Irrigation Potential of Irrigation Schemes of Jal Shakti Vibhag /DoA /Rural Development Department:

3.4.2.1 Improvement of Existing Irrigation Schemes for Distribution System:

Component including 10 sub-projects of Convergence Irrigation Schemes of Jal Shakti Vibhag /DoA /Rural Development Department)

3.4.2.2 Procedure of Sub-project Selection:

Appropriate locations where the IPHD and DoA has already developed irrigation system and the farmers are demanding more interventions from the Government to either extend the existing distribution system or to get the capacity building trainings to diversify their cropping pattern will be selected. Upon identification of such location/site, the project assesses the technical feasibility of the intended interventions and obtain the 'No Objection Certificate (NOC)' from Jal Shakti Vibhag /DoA /Rural Development Department to modify the existing system in terms of customization of existing distribution system for irrigation through Micro Irrigation System or any other system such as open channel/HDPE pipe.

3.4.2.3 Implementation Structure:

A DPR for each cluster shall be prepared and approved by the competent authority prior to execution.

In case of DoA's convergence schemes, irrigation facilities after improvement shall be handed over to KVA and KVA members will be executors of O&M of the facilities.

Table 3.5: Implementation Structure of Construction and O&M in Convergence Component

Stage	Convergence Component (10 Sites)	
	Facilities	Executor
Construction	Main distribution system (already done)	Jal Shakti Vibhag /DoA /Rural Development Department
	Additional distribution system (if any)	DOA
O&M	Main distribution system	Jal Shakti Vibhag /DoA /Rural Development Department
	Additional distribution system (if any)	KVA

3.4.2.4 Improvement of existing Irrigation schemes

Based on the above procedure and implementation structure, the distribution system will be developed at the selected sub-projects. A total of 10 sub-projects and 500 ha in total will be the target of this convergence component and the cost for improvement of distribution systems have been estimated based on the experience of Phase-1 i.e., Rs. 20,000 per ha.

3.4.2.5 Micro Irrigation Schemes:

Provision for creation of micro irrigation facilities in 20 % of target area have been made in the target sub-projects covering an area of 836 ha. The estimated cost for this component is based on experience of Phase-1 project i.e. Rs.100, 000 per hectare.

3.4.3 Infrastructure Development Support:

3.4.3.1 Extension Activities to be taken up under Infrastructure Development Support:

Since area to be developed with irrigation facilities require proper operation and maintenance support hence, Strengthening of KVA and federation of these associations at different levels are important for sustainability of the irrigation system. Operation & Maintenance (O&M) works are to be carried out by the KVA. Major activities to be undertaken under this sub-component are strengthening of KVA for improvement of water management and strengthening of O&M activities. Different sub activities to be undertaken under this are: **induction workshop for community motivators, awareness camp involving community, formalization of Farmers' Group, capacity development of MC members, training of SHG members & its office bearers. Workshops for cluster and apex federation & facilitation of these federations** will be conducted to strengthen operation & maintenance infrastructure.

3.4.3.2 O&M of Infrastructure Development

3.4.3.3 Warranty Period

Contractor and service provider shall be responsible of their construction works during the warranty period as given below:

Table 3.6: Warranty period of the Different Works under Infrastructure Development

No.	Item	Description	Responsibility	Minimum Warranty Period
1.	Civil works of Minor Irrigation System	Water harvesting Structure, Water distribution tank, Pipeline, Outlet etc.	Contractor	As per tender document
2.	Machinery and electric devices of Minor Irrigation System	Pumping machinery, Motor, Electrical Board, etc.,	Service Provider	1 year as per tender document Empanelment additional
3	Micro Irrigation Systems	Sprinkler system, Drip system, Storage tanks, etc.	Service Provider	As per DoA contract
4	Catchment Area Treatment	Wire Crates, Silt Retention Structure	Contractor	As per tender document
5	Solar/PV Panel System	Panels and other items	Service Provider	As per terms & conditions of empanelment with DoA/ HPCDP
6	Access Farm Road	Road	Contractor	As per tender document
7	Solar Fencing	Solar Panel, Fence, etc.	Service Provider	As per terms & conditions of empanelment with DoA

3.4.3.4 O&M Activities and structure of Monitoring by DoA

O&M shall be undertaken by the concerned institution during and after the completion of project activities as shown in the below table. The DoA shall be overall incharge of the infrastructure created under the project and shall support the KVA's & other institution in Operating & Maintaining the irrigation & other infrastructure.

Table 3.7: Owner and O&M Responsibility and Regular activities

No.	Item	Owner	O&M Responsibility	Activities required for strengthening of KVA to take O&M Responsibility
1 A	Minor Irrigation (LIS, STW)	DoA (Handing over to KVA)	DoA/KVA	<ul style="list-style-type: none"> ✓ Awareness building among farmers on judicious water use. ✓ Water Distribution: Distribution and determination of water tariff and collection. ✓ Collect irrigation charges from the farmers on hourly basis besides fixed monthly contribution by each member of KVA. ✓ Maintenance of Accounts. Payment of energy charges and replacement. ✓ Maintenance such as supervision actions, intended to retain an item in, or restore it to, a state in which it can perform the required function.
1B	Minor Irrigation (FIS)	KVA	DoA/KVA	<ul style="list-style-type: none"> ✓ Grievance Redressal of farmer members especially, on sharing and use of water.
2	Micro Irrigation system	DoA (handing over to KVA (Farmer))	KVA/Farmer	Build awareness among farmers & provide trainings for the proper usage of system, flushing etc.

No.	Item	Owner	O&M Responsibility	Activities required for strengthening of KVA to take O&M Responsibility
3	Catchment Area Treatment	DoA/KVA	DoA	Repair of wire crate structure if there are some damages.
4	SPV Systems Solar pump	DoA (handing over to KVA)	KVA	Regular Maintenance of solar panels, tracking system, electric parts and removal of bushes/ trees etc. around & above the panels.
5	Farm Access Road	KVA	KVA	Removal of gravels/ pebbles from the farm road, proper drainage and refilling of pot holes etc. if any.
6	Solar Fencing	DoA (handing over to KVA /Farmers group)	KVA/Farmers Group	Regular inspection of electric units, wires, clearance of grass & bushes etc. below the wires.

3.5 Farmers Support

The component includes formation and strengthening of KVA's, vegetable promotion, Research & Seed Production infrastructure development at SAU for Seed production, innovative activities, livelihood support activity and nutrition improvement, etc.

3.5.1 Sub-component - 1

3.5.1.1 Formation and Strengthening of KVA (Krishak Vikas Association)

Formation and strengthening of 306 number of KVAs will be carried out by BPMU Agricultural Extension Officers.

- (a) **The awareness campaign** to be implemented at the beginning of the activity will be conducted in the village and the training will be imparted to KVA. The training materials used for the training will be prepared by DPMU with the support of PMC and DPMU staff will carry out TOT to the person-in-charge of BPMU based on the material.
- (b) **Formation of KVA:**
Except activities targeting SHGs, the 306 number of KVA will function as a focal point for all activities carried out on sub-project level. The following activities will be undertaken under this component.
- (c) **Strengthening of KVA: Capacity development of KVAs for O&M Management:**
Before completion of the construction work, the capacity development training on operation and maintenance of irrigation and other infrastructure will be carried out by the BPMU for KVA members. In the training, KVA will develop an operation and maintenance plan for infrastructure facilities constructed by the Project. After handing over of the infrastructure facility, KVA will maintain the facility according to the O&M plan formulated. BPMU will give the necessary follow-up training and advice throughout the project period. The KVA shall also consider various steps in building their funds for O&M during post project period.
The contents of O&M training are given below:
 - Conduct workshop to discuss principles and practices of irrigation and water management.
 - Conduct training on water use planning for equitable water distribution.

- Conduct field training on basic engineering skills with reference to land levelling, watercourses, field channels, etc.
- Conduct training to MC Members (officer bearers) on participatory management processes including leadership, communication and conflict resolution.
- Conduct training on accounting and principles and practices; accounts, book keeping, financial audit and financial disclosures.
- Training on credit management.
- Training in crop diversification planning subproject development planning process.
- Training in Operation and Maintenance (O&M)

3.5.2 Sub-component - 2: Vegetable Promotion

BPMU will directly conduct trainings and field demonstrations. The BPMUs / DPMUs shall identify such farmers who are successfully doing vegetable cultivation in the jurisdiction of BPMU / DPMU to be empanelled as Master Trainers. Success of such master trainers in planning, undertaking demonstrations and trials.

However, in case of the staff's on-site operation exceeds 3 days a week, the work will be outsourced to KVK and State Agriculture Universities (SAUs). In addition, by using FPO to arrange training, distribution of materials and select beneficiaries, workload of BPMU extension workers can be reduced for efficient implementation.

3.5.2.1 Incubation and Capacity Development of 'Community Motivators':

The community motivator is selected from the target village/ other villages nearby the target village with sociological academic background and willingness/leadership qualities as a motivator. The selected 'Community Motivator' will coordinate all activities in the target sub-project and support the PMU. Community motivators consist of one male and one female. They will give emphasis on gender aspects for decision-making and beneficiary selection in each sub project. The following trainings will be conducted on capacity building of Community Motivator. The honorarium of Community Motivator will be paid during the project implementation period.

- Introduce advanced community motivators activities in Phase-1
- Aware the roles and responsibility on community motivators in the project
- Conduct facilitation training
- Conduct exposure visit to the advance area to have a clear image of the goals and expected activities

3.5.2.2 Training of Farm Economy Management, Training on farm management by farm type (advanced, intermediate and conservative):

Under this sub-component, farmers from 306 KVAs will be categorized into three groups, conservative, intermediate and advanced farmers. Especially for conservative farmer's continuous support in the form of trainings on cultivation technology, cultivation planning for the purpose of improving farm management for crop diversification will be provided. This will be implemented in following manner-

- 1st year: Preparation of crop diversification plan based on profit target
- 2nd to 4th year: update of production plan with proper following up
- Preparation of 3 training modules for farmers of three categories - (a) commercial - advanced, (b) subsistence or conservative and (c) intermediate farmers or commercial cum subsistence farming

- Focus is on both for vegetable & cereal crop productivity enhancement / improvement
- Based on the farm management plan, the technical cultivation support is provided
- Target crops might be similar with strategic crops identified in the interim report

These resources for trainings syllabus, contents, modules and actual imparting training activities will be carried out using resources in the State Agriculture University, KVK, advanced farmers, private companies and FPOs. Small satellite offices will be established between the sub-projects and the BPMU office in all districts for efficient management of training and field demonstrations by agricultural extension officers. For conducting trainings, technical manuals and materials developed by Technical Cooperation Project (TCP) “Phase II Project for Crop Diversification in Himachal Pradesh” and by Phase 1 will be utilized appropriately.

In case there are farmers in the KVAs who intend to introduce fruits as diversification, the Project will facilitate in establishing contact with Horticulture Extension Officer for providing the technical support as well the planting material.

Table 3.8: Training of Farm Economy Management and farm management by farm type

Content	Intensive training (1st year) / Follow up training (2nd to 4th year) <ul style="list-style-type: none"> • Support for resources inventory of each farmer • Support for set the profit target of each farmer • Support to understand the market needs and trend of vegetable • Support to understand the necessary cultivation skills, resources & risks • Support to prepare the cropping calendar based on above analysis • Conduct training on record keeping of cultivation
Target	25,500 number of farmers
Methodology	<ul style="list-style-type: none"> • Lecture in each sub-project • Lecture in training institutes for representative of beneficiary farmers

3.5.2.3 Training cum method demonstration on Cultivation Practice of vegetable crops:

Cultivation skills training will be conducted through four cropping seasons (two years). The summary of training is as summarized as the following table.

Table 3.9: Training cum method demonstrations on cultivation practice of vegetable crops

Contents	Conduct training and field demonstration (2crops x 4 or 8 demonstrations x 4 seasons) <ul style="list-style-type: none"> • Support on selection of quality seed and seedling with nursery management • Conduct training on overall cultivation management for respective crops • Conduct training on Integrated pest management • Conduct training on irrigation management • Conduct training on farm mechanization • Conduct training on difference on farming practices between open field and protected cultivation • Promotion of organic farming, soil moisture conservation techniques • Awareness on post-harvest processing & marketing
Number of Farmer Targeted	8,000 Number
Methodology	<ul style="list-style-type: none"> • Demonstration of proposed farming practices in plots to be selected • Arrangement of inspections with farmers for sharing proposed practices • Number of farmers adopted the package of practices disseminated during demonstration and training • Monitoring and evaluation

3.5.2.4 Seed Production and Demonstration (DoA):

Under HPCDP phase-II 3 DoA farms viz Seed multiplication farm at Karsog, (District Mandi), Seed production farm at Bhattu (District Kangra) and Vegetable Development Station at Bairtee (District Solan) will be developed as per various interventions proposed by DoA, within overall funds provision worth IR 260.00 Lacs. The Detailed Project Report of said farms will be prepared in coordination between HPCDP and DoA duly approved by PMC.

These farms will be developed as a model unit for collaboration between farmers, buyers and private agribusiness companies. DoA seed farms will provide sites for demonstrating as well as testing of agribusiness companies services or technologies in order to encourage matching between farmers and above mentioned companies. A part of the field in DoA farms will be made available for testing and demonstrating of seed and other inputs of private companies in PPP mode, in a way to test private companies seeds and other inputs. DoA seed farms are also expected to become an entry point for private companies where they can find business partners through demonstration and information exchange.

Marketing and Post-Harvesting Division in SPMU will set up platform to connect with private companies. DoA's seed farms will take care of plots for demonstration of private companies based on the technical requirement by the companies.

3.5.2.5 Food Grain's productivity training and demonstration

Food grain cultivation training and demonstration will be conducted through four cropping seasons (two years). The summary is as under:

Table 3.10: Food Grain's Productivity Training & demonstration

Contents	Conduct training and field demonstration (2 crops x 2 demonstrations x 4 seasons) <ul style="list-style-type: none">• Support on selection of quality seed and seedling with nursery management• Conduct training on overall cultivation management for respective crops• Conduct training on Integrated pest management• Conduct training on irrigation management• Conduct training on farm mechanization• Conduct training on difference on farming practices between open field and protected cultivation• Promotion of organic farming, soil moisture conservation techniques• Awareness on post-harvest processing & marketing
Number of Farmer Targeted	1,200
Remarks	<ul style="list-style-type: none">• While actual on-field implementation of the various training programmes/workshops, seminars, exposure visits, field demonstrations, buyer seller meets, farmers fairs etc.at sub project/cluster level, the implementation of these activities depends upon several variables viz., Sub Project-wise number of beneficiary farmers, actual site-specific requirements & focussed need-based programmes, etc. which are highly diverse in nature and are difficult to generalise.• Though, per unit cost norms for executing such training and extension activities have been clearly defined in the MoD and accordingly budget

	<p>provisions have also been made, yet, minute details such as site-specific training arrangements (venue related arrangements, refreshments and boarding & lodging arrangements for participants, etc.), subject specific training materials & inputs, etc. are required to be worked out at the time of actual on-site execution.</p> <ul style="list-style-type: none"> • Therefore, for implementation of above mentioned activities, designing of cost modules shall be taken up by BPMs at sub project level and the approval of such modules shall be accorded by the concerned DPMs and for the programmes to be executed at DPMU/Cluster level, the designing of cost modules shall be taken up by the DPMs and approval shall be accorded by the Project Director within overall approved cost norms. • Further, the utilisation of savings, if any, under above mentioned activities shall be expedited on similar pattern.
Methodology	<ul style="list-style-type: none"> • Demonstration of proposed farming practices in plots to be selected • Arrangement of inspections with farmers for sharing proposed practices • Monitoring and evaluation

3.5.2.6 Provision of Farm Machinery

Farm mechanization plays an important role in providing optimal utilization of resources and economy in time as well as in reducing drudgery of farm operations. This judicious use of time, labour and resources facilitates sustainable intensification (multi-cropping) and timely planting of crops, leading to an increase in production and productivity.

The physiography of farms and the practices of farm operations need a selective approach for right kind of induction of farm machinery like manually operated implements, self-propelled small machinery and more use of mini tractors, power tillers and power weeders for ease of doing farm operations in small and terraced field. This is going to increase timeliness of operations as well as reduction in drudgery of operation. It has also been observed that in agriculture involvement of female workers is more in comparison with male workers, therefore, gender issue needs to be considered for farm operations and light weight farm implements and machinery holds key position for the induction of new farm equipment's for food grain as well as for vegetable cultivation.

SPMU will contact with the supplier identified by GoI/DoA/RC/EoI, for procurement and the supplier also implements installation and O & M guidance.

The selection of beneficiaries will be carried out by the following process and the final decision will be made by BPMU for issuance of sanctioned letters (machinery upto Rs 10000) and by DPM for more than Rs 10000. The machinery will be provided with cost sharing basis contributed 50% of the actual machinery cost by the Project.

Operationalization of farm Mechanization

The Himachal Pradesh Crop Diversification Promotion Project (HPCDP), Phase-II is being implemented by the Government of Himachal Pradesh in collaboration with Japan International Cooperation Agency-Official Development Assistance (JICA-ODA). The project aims at promoting crop diversification in the target area of all districts of Himachal Pradesh through rehabilitation and development of infrastructure such as irrigation facilities, farm access roads supported by technical and capacity building programme for farmers on vegetable cultivation, food grain cultivation, farm mechanization, post-harvest technology and strengthening of extension services functions.

Agriculture is recognized as a primary livelihood source for many rural people and contribute to economic growth. Various research studies and policies have highlighted the role of agriculture in employment creation, food & nutrition security and reducing societal inequality and poverty. The agricultural sector also presents opportunities for entrepreneurship, which would be ideal for employment creation especially among youth. Entrepreneurship in farm mechanization, custom hiring services is a very common and successful concept which can be easily replicated in our project areas involving farm youth.

The increase in farm power input by using various power sources like mini tractors, power tillers and small engine operated units with improved farm tools and attachments reduces the drudgery of farm workers besides increase in farm productivity estimated around 12 to 34 per cent. The draught animal power is at dwindling state due to its limited power availability (0.8 to 1hp) per pair and high cost of maintenance towards feed and fodders thereby becoming irrelevant in present day agriculture. Initially the alternatives were not available but now situation has changed and all kinds of mechanical tools, implements, machinery available with power source in the various categories. Farm mechanization operations prevailing in the current scenario for farm operations viz seed bed preparation by use of tractor (8-20 HP/ 20-40 HP) sowing and planting by use of dibbler/ seed drill followed by use of spray pumps for spraying insecticides and pesticides and multipurpose thresher and other post-harvest operations. In recognition of these specific needs, the HPCDP Phase-II program is committed to making modern farm equipment accessible and affordable to small and marginal farmers. This will be achieved through a cost-sharing model that allows these farmers to take ownership of modern farming equipment. Which will increase farm power availability per hectare with ultimately increase in productivity of crops.

Need of Farm Mechanization in H.P

- **Increased Productivity:** Farm mechanization enables farmers to accomplish tasks more efficiently, resulting in increased productivity. It allows for timely and precise operations such as ploughing, sowing, harvesting, and post-harvest activities. By reducing the reliance on manual labour. Farm mechanization help farmers of Himachal Pradesh in maximizing agricultural output.
- **Labour Shortage and Cost Reduction:** Himachal Pradesh faces challenges related to labour availability and rising labour costs. Farm mechanization can address these issues by substituting labour intensive tasks with machinery. It help to overcome labour shortages and reduces labour costs making farming more financially viable.
- **Time Management:** Farm mechanization allows farmers of H.P to complete tasks within shorter timeframes.
- **Precision and Consistency:** Modern agricultural machineries are designed to perform tasks with precision and consistency. This helps farmers in accurate seeding, fertilization, and spraying, leading to improve crop quality and uniformity. It is estimated that the efficient use of farm machine could enhance the gross income of the farmers by 50 per cent through savings in seeds, fertilizers etc.
- **Change in Demography:** Himachal Pradesh is experiencing a shift in demography as youth are showing less interest in traditional farming practices. Farm mechanization can attract younger farmers by offering employment by using efficient approaches in farm mechanization.

- Mechanization in agriculture encouraged to sustain increased yields, to conserve land and water resources for more efficient use of inputs like seed, chemicals, fertilizers and energy.
- In H.P mechanization is hampered by stepped, fragmented, small and irregular fields, undulating topography, lack of adequate Agri engineers and skilled manpower, poor facilities of repair, maintenance and manufacturer of implements. Despite various limitations, there is scope of increase in productivity of land and farmers economy by creating small water resources for increasing irrigated area, land developed in amalgamation with efficient farm power.

Objectives of farm Mechanization:

- To increase the reach of farm mechanization to small and marginal farmers.
- To increase the use of modern agriculture machinery for crop production system in the region.
- To promote ownership of agriculture machinery by farmers for own use as well as to perform farm operations on others field on cost basis towards economic prosperity.

Note: To achieve the objectives, it is proposed to adopt the following drafted guidelines for purchase and operationalization of farm machinery under HPCDP JICA.

Detailed Guidelines for providing Farm machinery to the Farmers

- 1. Awareness and Orientation of farmer:** Awareness and Orientation of KVA and farmers about implementation of mechanization under HPCDP JICA Phase-II through extension officers. They can conduct training sessions, workshops and demonstrations to educate farmers about benefits of mechanization, the latest farming technologies and equipment. Collaboration between extension officers and KVAs' can help tailor the approach to the specific needs and challenges of the local farming community.
- 2. Inventory survey:** At the very first onset, the concerned KVA will conduct inventory survey of neighboring areas and confirm the rationality of the farm machinery to be provided in the sub project'. Extension Officer will facilitate in the process.
- 3. Nomination of Farmer:** The second step is regarding the nomination of farmer, whereby, the farmers will submit written application to the KVA. The criteria for nominating farmers for the purchase of farm machinery under HPCDP Phase -II is as under:
 - a. The applicant must be a resident of the sub project area since last three years, possessing sufficient farm land and should not be a migrant laborer,
 - b. Applicant who has been allotted Family Registration Number,
 - c. The concerned applicant must have diversified to high value crops/ access to resources and utility to practice scientific cultivation of crops (Applicable in the areas where improvement of existing Flow irrigation schemes/ Tube well schemes are in progress)
- 4. Selection of beneficiaries:** EO shall organize General House/ KVA Meeting for scrutinization and finalization of eligible farmers from the submitted applications (verify with data of HHS/ SDP) as per eligibility criteria given below:

- a. The farmer has diversified at least 20 percent of area under high value crops.
- b. Confirm the financial status, paying capacity of the applicant (farmer) whether he/she can bear the cost of the machinery.
- c. Confirm the Motivation of the farmer obtained through farm economy trainings/strategies! CDP Plan where farmer is willing to diversify at least 20 percent of area under high value crops.
- d. Women farmers, youth, SC/ ST Farmer may be prioritized in consultation with the concerned KVA of Sub project areas.

Table 3.11: Selection Procedure for Beneficiary of Farm Machinery

Procedure	Description	Implementer	Supporter
STEP 1 Inventory survey	KVA conducts inventory survey of agricultural machinery targeting neighboring villages and confirm the rationality to provide the machinery to the respective sub project	KVA	Community motivators
STEP 2 Nomination of potential beneficiaries	Confirm the motivation of farmers based on the information of farm management strategies obtained through farm economy management training. Also, confirm financial status of the potential beneficiaries whether they can bear the cost	KVA/ BPMU	Community motivators
STEP 3 Selection of beneficiaries	From the list of candidates listed from the sub-projects under their jurisdiction, the information obtained will be scrutinized and candidates who are valid and expected to be effective will be selected as beneficiaries.	BPMU	Community motivators

5. Sources for purchase of Machinery: Machinery and the Quotation/ Proforma invoice of the machinery shall be purchased/ procured strictly from the following sources:-

- a) Manufacturer/ Distributor / Dealers approved by the Department of Agriculture (DOA) by following the link agrimachinery.nic.in (Details enclosed under Annexure -C)
- b) Rate contracts of the machinery by following the link emerginghimachal.hp.gov.in (Details enclosure as Annexure D).

Note:

- Machinery which is not available on the above-mentioned sources and is high in demand by the farmer (mentioned under the MoD), can be purchased on the GeM portal/ Local Purchase Committee in concurrence with KVA. The machinery viz., Pneumatic vegetable transplanter, Manual Seed Drill, Post Hole digger/ Potato Planter/ Potato Digger etc. may be considered.
- The application of farmer along with proforma invoice and certification of machinery approved/certified /testing report by FMTTI/ identified institute of SAUs/ICAR of concerned Dealer/ Retailer/ Firm must be forwarded by KVA to the concerned BPM through the Extension Officer.
- BPM shall submit the documents and forward to the O/o the concerned DPMU for making provision or consideration (subsidy more than 10,000/-)

6. Submission of Documents : On the basis of fulfilling the given eligibility criteria's' the

selected farmer shall submit the application with prior approval/ recommendation from the concerned KVA to the concerned Block Project Manager through EO for the purchase of Machinery along with documents namely;

- Copy of Aadhaar Card,
- Quotation/ Proforma invoice of the machinery he/she is willing to purchase (includes Model and Price of the Machinery),
- Land papers/ Revenue Papers verification by BPM
- Copy of Aadhaar card,
- Copy of front page of passbook indicating the Aadhaar and PAN linked account
- In case of Big Machinery viz., tractor, multi crop thresher an affidavit/Undertaking /Declaration shall be obtained from the farmer on given terms and conditions. Recovery from the concerned farmer shall be effected in case of non-adherence of terms and conditions given in Annexure

7. Screening of documents: After exercising check on documents and recommendations by the BPMU, the same shall be forwarded to the DPMU for further scrutiny and approval/ Sanction of the Machinery where subsidy amount is more than ten thousand (Copy of application and Sanction letter enclosed in Annexure -E & Annexure G). In case where subsidy amount is less than Rs. 10,000/ BPM shall accord approval/ sanction for the purchase of machinery/ tools.

8. Accord of Sanction & Purchase of Farm Machinery: It includes the approval/sanction letter by DPMU/BPMU. After receiving the sanction letter, the farmer shall purchase and submit the original bill along with receipt and postal stamp (to be exempted in case of RTGS/NEFT/DD/Net Banking) to the concerned Extension Officer.

9. Time Line:

- a) KVA will submit the applications to the Extension Officer after following above mentioned codal formalities within 5 days after conduct of General House meeting.
- b) EO will verify and submit the documents to the concerned BPM within 3 days after receipt of documents from the KVA through offline or online mode.
- c) BPM after checking all the documents will accord the sanction to the machinery, where release of subsidy amount is less than Rs.10, 000 within 2 days (after receipt of documents from the ED). In case the subsidy amount of machinery is more than Rs.10000/- it is to be forwarded to the concerned DPM within 2 days (after receipt of documents from the EO).through offline or online mode.
- d) DPM will accord the sanction after checking all the codal formalities within 2 days (after receipt of documents from the BPM) through offline or online mode.
- e) After receiving the sanction letter, Farmer shall purchase the machinery with 25 days (more than Rs.10000/-) and 10 days (less than Rs.10000/-), failure to which sanction/approval will automatically stand cancelled.

10. Submission of Bill & Inspection of Farm Machinery: The Extension officer shall submit the bill along with photograph of joint inspection of machinery (by BPM, AE and Farmer) Trace of Chassis No and Engine No; Copy of RC (if required) etc. after verification to the BPM. The BPM shall scrutinize and verify the documents and further release the subsidy amount at 50 percent or Permissible limit whichever is less directly

into farmers account through DBT/ RTGS/ PFMS.

11. Inspection Visit: DPMU shall undertake random inspections, of at least 40 % beneficiary farmer who has availed subsidy.

12. Condition for farmer: The farmer who gets the benefit of subsidy once shall not be eligible to apply for the same implement again within four years.

13. Purchase of Whole Tool kit:

- Whole kit consisting of items namely Iron pan Kassi/Digging Hoe/ Khilnal Hedge shear/ Serrated sickle/ Secateurs/Hand rake/Pruning saw/ Plastic Watering can shall be procured by the BPM in concurrence with KVA restricting to the permissible subsidy amount i.e., Rs 1500/-(Whole Kit) or 50 percent of the actual cost of the whole kit, whichever is less as per Rate contract.
- If the whole kit is not available under Rate Contract, then farmer can procure the whole kit in concurrence with KVA. The rate of individual item should not exceed more than Rs 3000. The procedure to be followed for purchasing and availing subsidy on whole tool kit is given below:
 - 1) **Sensitization and awareness:** The EO shall organize a general house meeting of KVA to sensitize and elaborate on the provisions of whole tool kits for the farmers on subsidy. The subsidy shall be admissible on whole tool kit and not on individual item and only one kit shall be allotted to one Family Registration Number
 - 2) **Purchase through Rate Contract:** EO shall take the demand of tool kit in concurrence with KVA and forward it to the concerned BPM. While collecting the demand of tool kits, the farmer share shall be collected by the KVA from the interested farmers and shall be deposited in the KVA account. The BPM shall place an order of Tool Kits as per demand of farmers to the firm empanelled in the Rate Contract given at emerging Himachal website. After the purchase of tool kit by BeM and before distribution of tool kit to the beneficiary farmers the 50% farmers share shall be paid to the concerned supplier by the KVA and rest of the 50% will get paid by project share after verification from BPM.
 - 3) **If Rate contract is not available:** The application of farmer along with proforma invoice (providing detail of whole tool kit) of concerned Dealer/ Retailer/ Firm must be forwarded by KVA to the concerned BPM through the Extension Officer. BPM will send an approval letter to the KVA for purchase of tool kit within 10 days, after 10 days period it automatically stands cancelled. The concerned Extension officer will verify the bills of purchase of tool kit along with KVA and further submit to BPM for further release of subsidy/ project share.

14. In case DPM, intend to surrender the Budget, he/ she shall inform the undersigned within ten days from issue of this letter.

3.5.2.6.1 Directives

The machinery / tools shall be procured strictly from the manufacturers / distributors / dealers to be empaneled by the Department of Agriculture (DoA)/RC/EoI run by HPCDP JICA phase II for empanelment of manufacturers/dealers.

3.5.2.7 Provision of Poly houses and poly tunnels

3.5.2.7.1 Provision of Poly House and Poly Tunnel:

The poly houses of different sizes shall be installed on farmers' fields on cost sharing basis. Besides vegetables, nursery production is also very remunerative in poly houses. The selection of the potential beneficiaries is carried out by the KVA initially by looking at the performance of the farm economic management and field demonstration of vegetable and availability of the fund for cost sharing. The Community Motivator will support for fair selection of the candidate in the village. After selection of the potential beneficiaries in each sub project, the BPMU will decide the beneficiaries within available budget.

Table 3.12: Provision of Poly House and Poly Tunnel

No.	Item	Specification	Qty
1	Training cum method demonstration (low tunnels) for vegetable seedlings	3.6 sq-m per unit miniature versions of high tunnels	1,184
2	Installation of Walk-in-tunnels	Size:40 sq-m(10 m x 4 m) For 109 sub-project having CCA <25 ha: 2 no.	218
3	Installation of walk-in-tunnels	Size:40 sq-m(10 m x 4 m) For 197 sub-projects having CCA >25 ha: 4 nos.	748
4	Naturally Ventilated Greenhouse	105 sqm poly house including MIS	50
5	Small Poly Houses	105 sqm poly house	306

3.5.2.7.2 Implementation Process:

The Project assistance for installation of individual poly house the cost sharing will be 85:15. To avail project assistance, farmers shall apply to the District Project Manager who is the project sanctioning authority in the district through BPMU in the development block on prescribed application form (Annexure-X) duly supported with revenue record i.e. Jamabandi and Tatima of land, where he wants to construct poly house structure with water source (Please refer to Annexure XI – Format to be filled in to obtain the administrative approval. Annexure XII Self undertaking by Beneficiary on Judicial Paper for construction of Poly House / MIS and for the creation of water resource Lift pumping unit. Please also refer Annexure XIII Agreement between the farmers and selected firm / company (service Provider) for the construction of poly houses and installation of micro irrigation system). The BPM shall give his/her report to DPM on prescribed proforma (Annexure-XIV). Farmers shall have to give an undertaking in the shape of an affidavit (Annexure-XII), that in the event of departure from the above undertakings, he/she will not be eligible for project assistance and shall be liable to refund the whole or part of the project assistance availed, to the DPM. The affidavit would be on judicial paper and must be attested by the Notary.

The construction material to be used for the construction of poly houses and installation of other related infrastructure i.e. Irrigation system, lift etc. should be as per the specifications approved by DoA.

The authorization for installation of poly house/ poly tunnel shall be given by the DPM (Refer Annexure XV – Provision of poly-house and Poly tunnel – Authorization letter).

In case farmer avail bank loan, in that case, project assistance shall be released to the bank, so as to adjust the loan component of the bank. However, when poly- houses structures are constructed and M.I. Systems are installed through empanelled companies, in that case, payments can be

released by DPMs directly to the service provider after obtaining satisfactory completion report from BPM and the beneficiary, for that, authorization to release payment to companies be obtained from the beneficiary. Farmer will have to sign an agreement with empanelled company in agreement form enclosed as per (Annexure-XIII) before starting construction, 15% beneficiary contribution shall be deposited with DPM in shape of Bank Draft which will be released to service agency after the material is stocked at site and work is started. The guideline of this scheme as issued by DOA from time to time shall be followed and only empanelled service provider shall be given the work.

3.5.2.7.3 Role and Responsibility of BPMU:

- BPM and his/her core team comprising of ADO, JE, AEO will visit the site to verify the feasibility within 10 days from the receipt of application and will finalize the site and model of poly house on merit based on parameters like aspect, direction and orientation etc. The selection of models may be done as per Agro-ecological situation of the block and in consultation with the service provider concerned, keeping in view all the above parameters. In case, some site development is required, then the farmers will be guided accordingly and the farmer is required to provide well levelled field site for the construction of poly house to the empanelled company at the time of signing of agreement.
- Will recommend/ reject the application after inspection of site. In case the site is found suitable, the BPMU will record details as per Performa XI columns and will forward the same to the project sanctioning authority (DPM) for administrative approval along with estimate of poly houses structure, micro-irrigation and water sources etc. as the case may be within 10 days after inspection. To obtain administrative and financial sanctions, the indicative estimates provided separately can also be considered for which estimates have already been provided.
- Will exercise 100% test check during different phases of the execution of the project components. However, it is mandatory for BPM and his/her core team to undertake the following:-
 - ✓ Verification of developed site before signing the agreement or initiation of construction work after the receipt of sanction from DPM.
 - ✓ To witness the signing of agreement between farmers and company.
 - ✓ Verification and certification of construction material dumped at the site for construction of poly house and installation of MI system.
 - ✓ Preparation of estimate of water source.
 - ✓ Test check and submit completion report within 10 days after the complete construction of poly house and related infrastructure.
- Submission of all bills/vouchers within 10 days after completion report of poly house and MIS to the DPM. The BPM will submit the bills of poly house on the completion of poly house structure without waiting for the installation of MIS for which bill can be submitted separately.
- BPMU will ensure that farmer willing to avail assistance under the project must get training in the selected institutions- State Agriculture university (SAU)/ University of Horticulture and Forestry (UHF) before construction of poly house, if he/she has not got training earlier.

- BPM and his/her team will be responsible for quality control of construction, use of specified construction material and for timely construction of structure to ensure timely utility by the beneficiary. In case of any delay at farmer or company level, he/she will report the same to the DPM.
- The BPMs shall ensure to submit copies of sanction letter and reports to DPMUs and subsequently DPMU shall submit report to SPMU.
- Shall be responsible for preparation and submission of claims of project assistance along with photograph of poly house with farmers, bankers as the case may be to the project sanctioning authority i.e. DPM. The project assistance to be recommended on approved cost or only on actual cost basis, whichever is less.
- Will submit project completion reports on the prescribed format to the DPM timely after inspection or joint inspection in case of bank loan where bank loan was availed.
- After the completion of sub-projects, BPM will submit the PCRs to the DPMU within 30 days in the format placed as Annexure XVI – Proforma for Project Completion Report (Sample).
- Submission of progress reports and reimbursement claims to the DPM every month on prescribed format.
- Facilitation for signing of the agreement as per Annexure-XIII between the farmer and service provider (firm/company) for construction of green house and installation of MI systems (MIS) inside poly houses. He along with one local person will sign the agreement as witnesses.
- BPMU will have to maintain beneficiary-wise record as per Performa XIV.
- The BPM will ensure the display of sign-board by giving full details of beneficiaries, infra-structure developed, and assistance released, mentioning funded under HPCDP-II.

3.5.2.7.4 Parameters of selection of models:

- In warmer areas, D-Models (side and top ventilation) of poly houses may be recommended with shade nets only.
- D-Models with Fan & Pad systems are also recommended for warmer areas.
- No poly house is to be sanctioned without drip and fogger systems as per the requirement of the covered area.

3.5.2.7.5 Role and Responsibility of DPM:

For smooth and effective implementation of project, DPMs will be Nodal Officers.

- District level core team and block level core teams shall also get training in University/KVK as per calendar and module of training course to be finalized by SPMU in consultation with SAU. Dr. Yashwant Singh Parmar University of Horticulture and Forestry (UHF), Solan shall also be associated in training by following common training module and cost norms approved by the DoA.
- (a) DPM shall issue administrative approval after scrutiny of the cases within 10 days from the date of receipt of cases from BPM's with copy to the concerned bank, in case of Bank Loan. DPM will ensure that the copy of GI Pipe specifications, cladding material, name of selected company are supplied along with authorization letter to the concerned beneficiary.

- (b) The DPM shall issue authorization letter in favour of the beneficiary after he/she gets training for the construction of poly houses/installation of micro irrigation systems creation of water source as per recommendations of PIA on the prescribed authorization letter given at Annexure-XV. This format shall be applicable, when agreement for development of infra-structure is to be signed by the farmer with service provider.
- DPM shall sanction the projects and project assistance as per the final assessment and recommendation received from the BPM within 20 days from receipt of such request. Completion period of each sub-project should not be more than 90 days from the date of signing of agreement between the farmer and the empanelled company with further extension on justification in case, companies fail to complete the construction installation work within the stipulated time period in that case DPM will initiate action against the company by getting the beneficiary share refunded with 20% interest from the date of signing of agreement. In case company does not repay the deposited amount with interest then the same shall be recovered from the bank guarantee given by the company.
 - DPM will send copies of sanction letters to the executing company (service provider) and to the Bank in case of loanee farmers, also to BPM and SPMU
 - DPM and his/her core team will exercise at least 25% test check.
 - (a) DPM will point out shortcomings/defects if any in one go after proper inspection. Putting objection again and again leads to delay and also it appears that it is being done deliberately to delay the payments. The payments may not be held up without any reason and it should be released as per the instructions contained in the guidelines strictly. If such delays are noticed, strict action shall be initiated against the defaulting officers.
 - (b) The project assistance shall be released to the company directly through RTGS only, but after obtaining consent and completion report from farmers. DPM will ensure that the payments should be released within 30 days of the receipt of bills.
 - DPM will maintain beneficiary-wise record on Performa "XIV" and will post the same on departmental web site.
 - DPM will ensure submission of progress reports and reimbursement claims to the SPMU every month on prescribed format.

3.5.2.7.6 Details of Project Assistance:-

Rates per sq. meter and unit cost has been approved for different models of poly houses by DoA/HPCDP/ any other competent Govt. agency. Similarly unit cost of micro irrigation systems to be installed in the covered area has also been worked out 85% project assistance is available to the beneficiaries for the construction of poly houses and installation of micro irrigation in covered area under this project. Cost per sq. meter of different models of poly houses and micro-irrigation systems should be adopted from DoA/HPCDP/ any other competent Govt. agency. The remaining cost shall be borne by the farmers through his/her own sources or by bank credit. The project assistance shall be released after completion, Farmers can also avail credit for initial investment from bank through KCC or otherwise which shall be adjusted after receipt of project assistance.

General:

- For sensitization, capacity building of extension officers/ farmers, about green-house technology, State Agriculture University, UHF Nauni, Krishi Vigyan Kendras, NGO's etc. shall be involved.
- Site-specific cost estimates of all the components shall be prepared by the BPMU/PMC.
- Farmers shall be provided prescribed form to enter into agreement with eligible firm/company for the construction of poly houses and execution of micro irrigation system.
- To upgrade the skill of farmers regarding poly houses technology, training-cum-method demonstration will be provided.

3.5.2.8 Program for Next Generation:

As per Project document (MOD) this sub-component will be implemented in collaboration with agriculture collage and industrial training institutes, the students will be selected from schools to conduct the program with utilization of their facility. Educating and exposing to the farming sector technologies across the food supply chain enable these youth to make up their mind in taking up career in agriculture field and to take up capacity building and entrepreneurship avenues in this sector.

3.5.2.8.1 Implementation of the sub-component in schools:

- Program be implemented in the schools with the consensus of school authorities & guardians
- Schools within vicinity of BPMU shall be selected
- 30 students per school may be selected from upper classes in 70 schools
- Formation of school organic garden, vermi-compost pits etc.

3.5.2.8.2 Some activities:

- Orientation session to all the students
- Identification of possible club/group to implement and take care of the activity.
- Preparation of a plan from the beginning till the end (e.g. from preparation of land up to harvesting, or even up to tasting and cooking for vegetable cultivation activity)
- Actual cultivation in the school/farm
- Study visit
- Processed food making competition like making Jam, jelly, candy, juice, pickle etc. among students
- Leadership development program
- Competition Program

Table 3.13: Program for Next Generation**School Students**

Title	Contents	Tentative Target	Duration of Activities (days)	Numbers of Activities to be carried out
Orientation to the Extension Staff (PMU)	Awareness on implementation of activities of next generation, Confirmation of implementation schedule	Staff of DPMUs and BPMUs	1	2
Sensitization Program for Potential Participants	Orientation workshops with targeted schools	Students in 70 schools	1	2
Motivation courses and basics of farming	Motivation-cum-training of Organic Farming	70 Schools x 30 Students	1 season	2
Workshop on basic and Various Options Suitable in the Food Supply Chain Entrepreneurship Development in Farming Sector	Quiz and Nursery Assessment	70 Schools x 30 Students	1	2
	Quiz at BPMU Level	50 students x 15 BPMUs	1	2
Leadership development program	Youth Leadership Training Program at SPMU Level	15 BPMUs x 5 Students	1	2
Study / exposure visit to various enterprises	Study-cum-Exposure visit to SAU/IHBT Palampur/ sub-Project area of HPCDP-JICA-ODA	15 BPMU x 5 Students	1	2
Specialised Counselling for Different entrepreneurship	Quiz-cum-Model Assessment	15 BPMU x 5 Students	1	2
Concluding Function	Wrap-up Workshop	Students and other stakeholders	1	1

3.5.2.8.3 Implementation of the sub-component for students of Agriculture College/ITIs:

The program will be implemented by PMU in association with a local NGO who has the experience in the entrepreneurship of the small business in the rural area and BPMU will control the work quality. Emphasis shall be given on agribusiness activities, getting internship on farm based companies, storage and processing of farm produce and value chain, supply chain development etc.

3.5.2.8.4 Technical Intern Training Program (TITP)

Table 3.14: Young Farmers Program

Title	Contents	Target	Duration of Activities (days)	Numbers of Activities to be carried out
Orientation of the Extension Staff (PMU)	<ul style="list-style-type: none"> • Awareness on implementation of activities of next generation • Confirmation of implementation schedule 	Staff of DPMUs and BPMUs	1	12 (3 times each DPMU)
Sensitization Program for potential participants	Selection of youth from Selected KVAs, 5 youth from 2 KVAs per BPMU: 140 Youth	10 youth/ 2 KVAs/time/ BPMU	1	42 (3 times each BPMU)
Motivation courses and basic of farming	Orientation and Awareness on basics of modern farming techniques, resource pooling, supply chain, FPC (At DPMU level) followed by Identification and grouping for next level: 30 to 40 youth selected by the BPMUs, 2-day duration	30 to 40 youth/ DPMU	2	12 (3 times each DPMU)
	Happiness/Motivational program DPMU Level: 5-day course for 30 to 40 youth	30 to 40 youth/ DPMU	5	12 (3 times each DPMU)
Workshop on basic and various options suitable in the food supply chain. Entrepreneurship Development in Farming Sector	Advanced awareness program on crops/enterprises:	30 to 40 youth/ SPMU	1	6 (2 times x 3 years)
	Trainings and exposures to innovative farm technologies. 50 youth at a time SPMU Level	30 to 40 youth/ SPMU	5	3 (one time/year)
	Conducting of demonstrations in line with the Marketing Opportunities including FPC	2 KVAs/ BPMU	One season	84 (14 BPMUs x 2 seasons x 3 times)
	Assessment through field days and Follow-up-workshop- DPMU Level	30 to 40 youth/ DPMU	1	12 (3 times each DPMU)
	Identification of enterprises/crops for the advanced program (At DPMU level):	Some youth, Staff of DPMU and BPMU	1	6 (2 times a year x 3 years)
	Preparation of Business plan at BPMU/DPMU Level for the participating groups/individuals: at least 4 Business plans to be prepared for each DPMU	30 to 40 youth/ DPMU	1	12 (4 times a year x 3 years)

Title	Contents	Target	Duration of Activities (days)	Numbers of Activities to be carried out
Leadership development program	Advanced Farming Workshops on the Key Issues of business plan 2 days at DPMU Level	30 to 40 youth/DPMU	2	12 (4 times a year x 3 years)
Study / exposure visit to various enterprises	Exposures/Trainings: Selected interventions/activities 5 to 10 participants	5 to 10 youth	5	6(2times a year x 3 years)
Specialised counselling for different entrepreneurship	Assistance in Business Plan Execution and Linkages with The FPC And Market:	5 to 10 youth	5	12 (4times a year x 3 years)
Preparation of business plan	Exhibition of the successful business plans for further dissemination.	Selected Youth, Staff of DPMU / BPMU, Stakeholders	1	12 (4 times a year x 3 years)

3.5.3 Sub-component - 3: Research and Seed Production

Funds provided under this component shall be utilized by the State Agricultural University (SAU, Palampur) on execution of 11 Nos. Research & Development Projects along with establishment of 1 No Model Seed Farm. The funds shall be released to the SAU in accordance with the T&C defined in the MoU signed between HPCDP Phase II and SAU. Utilization Certificate of funds shall be submitted by SAU.

3.5.3.1 Research and Seed Production:

3.5.3.1.1 R & D Support:

The project will invest in pilot research with the aim of utilizing new technologies in the future. These activities contribute to the achievement or sustainability of project outcomes during or after project implementation. These activities are mainly outsourced to SAU Palampur and the quality of research results is managed by PMU.

The summary of the R&D support activities is as follows:

Table 3.15: Summary of R&D Support

Name of Activities	Objective	Contribution to the Project Outcomes	Duration
Multi-location testing of CMS based hybrids of cauliflower in Himachal Pradesh	New hybrids of cauliflower shall be made available for cultivation in the state	Introduction of new high yielding varieties of cauliflower to farmers in the Project.	3 years
Multi-location testing of GMSbased bacterial wilt resistant hybrids of chilli in Himachal Pradesh	New hybrids of chilli shall be madeavailable for cultivation in the state	Introduction of new high yielding varieties of chilli to farmers in the Project.	3 years

Name of Activities	Objective	Contribution to the Project Outcomes	Duration
Generation of double haploid through induced androgenesis in head cabbage (<i>Brassica oleracea</i> var. <i>capitata</i> L.)	Development of potential double haploids	It is expected that new varieties be introduced for the project.	3 years
Multilocal testing and validation of newly developed bacterial wilt resistant and high yielding bell pepper lines/hybrids in H.P	Identification of elite bacterial wilt resistant bell pepper lines/hybrids for different agro climatic zones of H.P.	It is expected that tolerant bell pepper varieties to bacterial wilt be newly introduced and applied by farmers of the project.	2 years
Multilocal testing and validation of newly developed yellow vein mosaic virus resistant and high yielding okra lines/hybrids in H.P	Identification of elite yellow vein mosaic virus resistant okra lines/hybrids for different agro-climatic zones of H.P.	It is expected that new varieties of okra be introduced to farmers of the project.	2 years
Development and promotion of management technology against insect-pests of brinjal	Development of pest management module on eco-friendly approaches	It is expected that useful pest management module be introduced in the project and production would be increased.	2 years
Management of root-knot nematode, <i>Meloidogyne incognita</i> in cucumber under protected cultivation	Development of effective management tactics under poly house conditions for the management of root knot nematode	It is expected that production of vegetables in poly houses would be improved. Further product quality would be also increased.	2 years
Assessment, validation and refinement of disease management technology for vegetable crops	Refinement and development of integrated disease management technology in vegetables.	It is expected that damage by diseases be mitigated.	3 years
Enhancing rice production in high-altitude areas of Himachal Pradesh by development and popularization of high yielding, cold tolerant japonica rice varieties through farmers' participatory approach.	Development and popularization of high yielding japonica varieties of rice	New market of Japonica rice might be created for the project.	3 years
Genetic amelioration of Kala zeera (<i>Bunium persicum</i> Boiss) using Tissue culture/ micro propagation approach	Development of efficient micro propagation technology to shorten the seed to seed cycle and enhancement of seed germination with technological interventions.	It is expected that quality seeds be introduced for the project.	3 years
Popularization of potential A B C crops of North Western Himalayas as vegetable and seed under organic and natural farming conditions through participatory plant breeding. (ABC) Amaranthus, Buck-wheat and Chenopodium.)	Availability of quality planting material Increase in income of farmers	New market would be created in and around the project.	3 years

3.5.3.2 Infrastructure Development at SAU for Vegetable Seed Production:

The project components are summarized as follows.

Table 3.16: Summary of Vegetable Seed Production in SAU

Name of Activities	Description
Identification of compact area in the University Farm	Area of 20 ha compact block has been identified at the Banuri farm of the University at Palampur
Cleaning of Area	This area is presently covered with wild/unwanted bushes, trees, abandoned tea plants and has become the hide-out for breeding of wild and stray animals. Presently, the area is of no economical use. Wild and abandoned tea plants will be cleaned/uprooted from the area.
Terrace construction	The area so cleaned will be developed to cultivable terraces by cutting the soil profile to an average of 0.75 m.
Farm road construction	For easy approach and movement of farm machinery, farm road of about 3 km with 2.4 m width will be constructed around and between the area
Irrigation development	The area is rain-fed and to harness appropriate productivity of the crops, irrigation facilities are mandatory to be created. In the mid-hills, bore-wells are not a viable option in long term due to poor recharging of underground water sources as run-off losses occur during rainy season. Therefore, the water from perennial source (khad) from a distance of about 6 km has been proposed. The water from this source will be pumped and through underground GI pipeline will be supplied to RCC water storage tank of 5.0 lakhs litres capacity. This will ensure the regular water supply in the area throughout the growing season. This water will be further distributed to different blocks of the area through underground pipes and 5 other storage tanks, each of 50,000 litres capacity will be constructed. One abandoned bore-well in the area will also be rejuvenated to meet out some irrigation requirement.
Provision of sprinkler irrigation system	For effective use of water to harness maximum outcome, sprinkler irrigation system will also be installed.
Poly houses	Three poly houses of a size of 252 m ² each shall be built at one location to support seed production of some selected commodities like flowers and vegetables under protected conditions.
Provision of fencing/ boundary wall	The proposed area to be put under seed production is surrounded by local villages, hence need to be protected from illegal aggression. Thus, a boundary wall/fence has been proposed to be constructed over a length of about 3.6 km. This will also help in providing protection to the farm area from wild/stray animals which otherwise cause huge losses to the seed crop.
Provision of farm machinery	Farm machinery is essential for the mechanical cultivation of the crops. Therefore, provision for tractors with required farm implements has been proposed.
Construction of storage	A provision has been made to construct a seed godown of 1,000 quintals seed storage capacity along with the construction of covered threshing floor etc.
Provision of seed processing machinery:	To improve the quality of raw seed, seed processing plant is mandatory. One such plant of 1.5 ton capacity will be installed with the accessories like indented cylinders, specific gravity separators, seed dryer, weighing and packing machines.

3.5.4 Innovative Activities

Innovative activities aim to disseminate advanced technologies for farmers for productivity improvement. Under this component, different activities viz., Establishment of Centre of Excellence for Vegetable Nursery Production, Trial for Soil-less Cultivation/Fan & Pad GH with vertical system, Provision of tubular structure shade net houses, Provision of plastic mulching material, Provision of Anti-Hailnets in hail prone areas & Assistance for soil testing kits shall be implemented.

Centers of excellence (COEs) will be established at SAU Palampur & KVK, Bara (Nadaun) campus for provision of quality seeding for different vegetable crops of tomato, cauliflower, cabbage, different cucurbits, etc. to the farmers of the State including beneficiary farmers of HPCDP Phase-II. The COEs will be utilized for pilot business trial to facilitate the collaboration between FPO and agribusiness operators.

The summary of innovative activities as follows:

Table 3.17: Summary of Innovative Activities

Activities	Objectives	Specification	Unit Cost `000	Qty
Establishment of Centre of Excellence for Vegetable Nursery Production	<ul style="list-style-type: none"> Sales of quality seedlings Demonstration on production of quality seedlings Dissemination on skills on seedling production 	<ul style="list-style-type: none"> Hi-tech Green House: 560 sqm Fan & Pad system Shade net house with covered area of 250 sqm Solar PV pump (2HP) Shallow Tube Well 	6800	2 nos.
Trial for Soil-less Cultivation/Fan & Pad GH with vertical system	<ul style="list-style-type: none"> Pilot testing and demonstration on advanced technology 	<ul style="list-style-type: none"> Fan & Pad Green House with vertical system 250 sqm 	10,000	1 no.
Provision of tubular structure shade net houses	<ul style="list-style-type: none"> Demonstration on production of quality seedlings and plants Demonstration on protection from natural weather disturbances such as wind, rain, hail and frost. 	<ul style="list-style-type: none"> 250 sqm shade net house 	816	50 net houses
Provision of plastic mulching material	<ul style="list-style-type: none"> It is completely impermeable to water. To facilitate fertilizer placement and reduce the loss of plant nutrient through leaching. To provide a barrier to soil pathogens 	<ul style="list-style-type: none"> 10,000 sqm per sub-project 	4	306 sub-projects
Provision of Anti-Hailnets in hail prone areas	<ul style="list-style-type: none"> To protect fruit and vegetables against hail 	<ul style="list-style-type: none"> 500sqm per sub-project 	35	153 sub-projects
Assistance for soil testing kits	<ul style="list-style-type: none"> For on the spot soil test 	<ul style="list-style-type: none"> To each extension officer 		50 units

3.5.5 Livelihoods Support for on /off farm activities:

Livelihood support intervention activities shall be implemented in accordance to the modalities finalized in the Livelihood Development Manual.

3.5.5.1 Nutrition Improvement Activity:

Nutrition improvement activities will be undertaken as a part of 'Farmer Support Component' implemented by Extension Officers and direct beneficiaries are women in SHGs, children under

the Anganwadi system and students in local schools. BPMU may deploy NGOs for livelihood support for SHGs and nutrition improvement will be also taken care of by these NGOs under supervision by Extension Officers in DPMU, with support from PMC.

3.5.5.1.1 Sensitization of nutrition sensitive intervention:

Nutrition Expert in DPMU with support from PMC will conduct series of workshops at various occasions prior to commencement of following activities

- Awareness of nutrition issues and solution through improvement of diet.
- Proper treatment of water, sanitation and hygiene

In the workshop, in order to identify the roles in household for nutrition improvement, intra-household decision making mechanism in terms of selection of crops for cultivation as well as food for meals will be examined.

Stakeholders: Extension officers in DPMU, BPMU, DoA, school teachers, NGOs, families of women in SHGs and in anganwadis.

3.5.5.1.2 Dissemination of kitchen Garden for Nutrition Improvement

For dissemination of kitchen garden, eight nutrient rich vegetables viz. Amaranth, Beetroot, Bok choy/Pak choi, Broccoli, Carrot, Green Soyabean, Kale and Swiss Chard will be used. For creating awareness among general nutrition knowledge and benefits of nutrient rich vegetables, pamphlets or small booklets. Videos/ PPTs may be shared/shown. Extension materials prepared by TCP may be used for this purpose.

A seedkit containing eight small packets of seeds of the eight above-mentioned vegetables will be provided in each household. The seeds will be supplied by State Agriculture University and Extension Officers will provide technical support in terms of crop management during cultivation. The Project will invite Anganwadi workers to workshops and trainings as much as possible. Besides, DPMUs will approach and coordinate with the District officers of Department of Women and Child Development so that beneficiaries of this component can supply nutrient rich vegetables to Anganwadis.

3.5.5.1.3 Dissemination of recipes using nutritious ingredients:

TCP had developed more than 50 recipes consist of vegetables and other foods, including above mentioned eight nutrient rich vegetables. These will be disseminated through sensitization workshops conducted by DPMU/BPMU through online mode through YouTube or any other medium. During the dissemination not only the recipes but education related to the nutrient content of the recipe and how much of the portion of the particular recipe will give what amount of daily required nutrients will be shared with the participants.

The Project may also share video/power-point presentation on general nutrition information with special focus on quality and quantity of food (Amount of food to be included from each food group)- balanced diet, video/PPT on anaemia – prevalence, consequences, treatment and prevention through diet modification and video/PPT on obesity- prevalence, consequences, treatment and prevention through diet modification.

3.5.5.1.4 Nutrition Promotion under Next Generation Programme:

As a part of Next Generation Programme, nutrition education will be carried out. DPMU/BPMU in collaboration with local schools will provide special lessons on nutrition as a part of Next Generation Programme. The lesson will be combined with cooking demonstration using nutrient rich vegetables. Orientation of teachers, staff and students regarding importance of nutrition will be done prior to the activity.

3.5.5.1.5 Target Area:

Out of four DPMUs, this activity will be carried out by one DPMU. Considering the advantage of experience of nutrition improvement activities in TCP, 60 sub-projects in Kangra District under DPMU Palampur is tentatively selected as target area.

3.5.5.1.6 Indicative Beneficiaries:

- 4,500 families or less of members in 60 KVAs in the target sub projects
- 2,000 students in 10 schools
- 750 children in the Anganwadi system

3.5.5.1.7 Implementation Structure

DPMU Palampur will take charge of overall nutrition improvement activities in 60 sub projects. Field level intervention will be done by extension officers in four BPMUs.

Extension Officers at DPMU Palampur and BPMUs, with support from PMC, will coordinate with officers incharge of livelihood activities in DPMU and BPMUs and report to District Project Manager and Deputy Director (Agriculture Extension cum Farmer Support and Institutional Development) , who is in charge of livelihood in SPMU.

3.5.5.1.8 Overall implementation of Livelihood and Nutrition Improvement Activity:

Livelihood improvement and nutrition activities will be carried out by BPMU for SHG farmer's identification and capacity building and specific livelihood improvement activities will be outsourced to local NGOs if required. In addition, related departments such as Department of Health (DOH), Department of Fisheries (DOF) and Department of Animal Husbandry (DOAH) of Government of Himachal Pradesh will provide technical advice regarding activities as appropriate and PMC will provide technical guidance support to SCTC for the shiitake mushroom cultivation/Training/Marketing.

3.5.6 Pilot project for SHEP

The SHEP (Smallholder Horticulture Empowerment and Promotion) Approach aims to empower smallholder farmers in their pursuit of market-oriented agriculture, focusing on horticulture and agricultural crops. It endeavours to enhance farmers' capacity to engage in sustainable farming as a business by providing them with necessary marketing and production skills. SHEP recognizes the crucial link between farmers' motivation and skill development, understanding that motivated farmers are more likely to actively participate in training activities and effectively learn new skills.

Originating from a collaboration between Kenya and Japan to improve Kenya's agricultural extension services, the initiative began in 2006 through partnerships with JICA, the State Department of Agriculture, and the Ministry of Agriculture, Livestock, and Fisheries (MOALF), with an initial target of reaching 2,500 beneficiaries within two years. SHEP now targets 8 states, including Andhra Pradesh, Himachal Pradesh, Jharkhand, Meghalaya, Mizoram, Odisha, Rajasthan, and Uttarakhand.

The SHEP Approach is rooted in the principle of transitioning from "Grow and Sell" to "Grow to sell," emphasizing the promotion of "Farming as a Business." Gender inclusivity is considered integral to the implementation of SHEP activities.

Activities under the SHEP Approach include:

- I.** Sharing goals with farmers through sensitization workshops.
- II.** Raising farmers' awareness through participatory baseline surveys, stakeholder forums, and market surveys.
- III.** Supporting farmers in decision-making processes, such as target crop selection and crop calendar creation.
- IV.** Equipping farmers with necessary skills through in-field trainings.

Under the HPCDP Project, the initial target is 28 model subprojects under the SHEP approach. More than 10 officials have already been trained through various workshops, meetings, and exposure visits outside the state. The HPCDP project aims to train all extension officers and marketing officers in the aforementioned approach, with a goal of targeting 296 subprojects under SHEP Activities.

In the Project, supportive activities for farmers are planned to be organized from three layers: 1) sub-project level, 2) Collection Centre level (cluster level), 3) State or District level. At the first layer, basic technical support on crop cultivation and livelihood improvement are planned for bottom-up of farmers with infrastructure development in sub project level. At the second layer, support on establishment and capacity building of FPOs to be joined by advanced farmers and will be conducted in collaboration with agribusiness companies at collection centre. At the final layer, mandis and private sector of agribusinesses will be supported to activate farmers' agriculture business.

The Project is to support FPOs' matching to agribusiness operator and prepare action plan by themselves including necessary technical training (business management, operation of collection centre, value-addition of crops, etc.) and connecting to existing financial scheme.

Training for SHEP approach will take place as a pilot activity targeting two KVAs in each BPMU, in total 30 KVAs implementing model SHEP site. The target KVAs will be provided with training course for SHEP approach prior to training-cum-method demonstration on cultivation practice of vegetable crops. Training for SHEP will be conducted at the first cropping season and the second cropping season for each target group. The detailed programme should be prepared in accordance with "SHEP Handbook for Extension Staff" published by JICA as attached at Attachment No.22 of MoD. SHEP detailed guidelines are also given in MoD document Attachment 2: Page No. 14.

[Step 1] Sensitization Workshop and Selection of Target Beneficiaries and Sharing the Vision/Goal:

[Step 2] Training for BPMU Extension Staff on SHEP implementation process:

After the selection of target beneficiaries, BPMU with support from PMC shall organize five-day training on the concepts of SHEP, methods of model farmer groups selection, activity planning and implementation methods, work plans for the activities, budget formulation methods, etc. The team also learns how to conduct a baseline survey and visit exemplary farm groups that have succeeded in income increase to learn the experience of the farmers.

[Step 3] Preparatory Baseline Survey:

In the baseline survey, model farmer groups conduct a survey about the situation of the group and member farmers using a prescribed survey sheet with guidance from extension officers. Specifically, they record cultivation area, yield, and unit selling price, inputs, gross income, profit, cultivation techniques, status of use of techniques, etc. for each of the Agricultural/Horticultural crops planted in the last cropping season. Using Group Empowerment Indicators (GEIs), the farmer group checks the status of their own organization together with an Extension Officer to measure improvements in leadership, cooperative relationships and gender-related matters of the group

[Step 4] Farm Business Linkage Stakeholder (FABLIST) Forum:

The purpose of the FABLIST forum is for farmer groups and market players (buyer) in the small-scale horticulture industry to meet, exchange information and expand networks. The participants are representatives of farmer groups (both male and female), extension officers, market players such as agricultural inputs (seed, fertilizer and agrochemical) companies, agricultural machinery companies, agricultural product processors, agricultural research institutes, microfinance institutions, buyers of agricultural products, government organizations, NGO, etc. Each participant will have a booth with products and presentation documents. Through the business meetings, the participants have in the forum, the farmer groups understand the potential and prospects of their horticultural businesses, which in turn raises their motivation for commercial farming.

[Step 5] Joint Extension Staff & Farmers' Dual Gender (JEF2G) Training:

A series of trainings will be provided to the representatives of farmer groups and extension officers about market surveys, crop selection, problems analysis, objectives analysis, action plan formulation and gender-related matters. In the training about market surveys, representatives of farmer groups and extension officers' conduct a survey simulation in a nearby market with a format prepared by SHEP concerning marketable crops, seasonal price changes, required quality and quantity, etc.

[Step 6] Group Exercises- Market Survey and Formulation of Action Plan

The techniques learned in the JEF2G Training should be shared in each farmer group. With support from extension officers, male and female representatives of farmer groups who attended the training conduct market surveys with other

members. Then, all members of the farmer group discuss the results, select crops for the group and formulate an action plan.

[Step 7] Facilitators’ Training for Farmers’ Demand Driven Extension (FT-FaDDE)

Based on the action plans created by farmer groups, FT-FaDDE is conducted, where extension officers learn knowledge and techniques required when supporting farmer groups. The extension officers learn basic vegetable crop production knowledge and techniques as well as specific knowledge and techniques for cultivation of the selected crops. This will enable extension officers to conduct in-field training tailored to farmer needs. On the last day of the training, extension materials in the form of an educational flip chart are given to the extension officers.

[Step 8] In-Field Training by Extension Officers

After the FT-FaDDE, each trained extension officer disseminates techniques in line with the action plan to the farmer groups s/he is in charge of. In the in-field training, which is conducted several times each cropping season extension officers teach in a practical manner knowledge and techniques necessary for the production of the crops selected by the farmer group.

[Step 9] Sale of Crops

After using the learned techniques in their fields, farmer groups or individual farmers sell crops through the sales channel they developed on their own.

Table 3.18: Sale Channel Development Procedure

Number of Farmer Targeted	800 farmers (28 KVAs)
Quantity	<ul style="list-style-type: none"> • sensitization workshop cum training (1 day) : 28 times • Baseline survey: 28 KVAs • Forum with buyers (1 day) : 28 times • Market survey by farmers (1-2 day(s)): 28 times • Training on action plan preparation (1day): 28 times

Sub-components of Component-4: Value Chain and Market Development

Table 3.19: Value Chain and Market Development

No.	Project Sub Components	Inputs	Executing Agency	Implementation Agency
Strategy 1: To mobilize and incubate FPOs as a Business Entity				
1.1	Bringing up FPOs as a business entity	<p>Trainings</p> <ul style="list-style-type: none"> • Concept of agri-cooperative Movement • Organization Management • Business Management (business planning, financing, accounting, documentation & filing, computer operation & communication, etc.) • Govt. supporting schemes and a way of access • Agri. marketing and market-oriented cropping • Post-harvest management of agri. produce • Quality standards, grading and evaluation of agri. produce • Market information system (eNAM, EMI cell of HPSAMC) • Laws and regulations related to agri. marketing business • Study tour to advanced FPOs and private enterprises 	PMU (Marketing & Post-Harvesting Division) assisted by PMC	Service providers hired by PMU
1.2	Establishment of FPO's Collection Centre	<p>Envisaged Facility & equipment</p> <p>Details will be made based on FPO's business plan. Post-harvest operation hall, storage, handling tables, conveyors for grading, washing machine, pre-cooling cabinet, weighing & packing machine, office, computer set, vehicle (truck), etc.</p> <p>Initial Handover Training</p> <p>O & M of facilities and equipment</p>	PMU (BPMU) (Business plan is made by FPO)	Local contractor/ Suppliers
1.3	Corpus Fund for sustainable activities of FPOs	<p>FPOs need to secure operational cost to purchase the produce from its member farmers. However, it is a challenge for FPOs to access financial services due to lack of collateral. The Project will take steps to provide FPOs with financial access by creating corpus fund to fulfil the needs of FPOs by the time they acquire adequate credibility to borrow from other financial institutions.</p> <p>The information below will be examined by PMC in project implementation stage;</p>	PMU (Marketing & Post-Harvesting Division)	

No.	Project Sub Components	Inputs	Executing Agency	Implementation Agency
		<ul style="list-style-type: none"> Fund governance structure and management rules Fund management, including risk assessment Loan Eligibility criteria Loan size and nature of loans Loan appraisal rules and procedures, duly simplified Monitoring, reporting and countermeasures against default Possible relationship with financial institutions like NABARD 		
2	Strategy 2: To facilitate participation of wide range of private enterprises in the business			
2.1	Matching FPOs with agribusiness operators	System development and on-the-job-training <ul style="list-style-type: none"> Registration of potential FPOs & agribusiness operators including CAs (periodical updating) Disseminating information on potential FPOs & agribusiness Operators (periodical issue/updating of newsletters, brochures, website, SNS, etc.) Providing consultation services to potential FPOs & agribusiness operators to enter a joint business operation (contract farming, JV, etc.) Providing intermediary services to facilitate a joint business operation between FPOs & agribusiness operators Introducing possible Govt. schemes supporting a joint business operators (periodical issue/updating of newsletters, brochures, website, SNS,) Providing consultation services to potential FPOs & agribusiness operators to enter a joint business operation (contract farming, JV, etc.) Providing intermediary services to facilitate a joint business operation between FPOs & agribusiness operators Introducing possible Govt. schemes supporting a joint business Matching event <ul style="list-style-type: none"> Organizing investment fairs, matching event and site-visit tours 	PMU (Marketing & Post-Harvesting Division)	PMC

No.	Project Sub Components	Inputs	Executing Agency	Implementation Agency
2.2	Facilitation of Demonstration farm /Pilot business trials	System development and on-the-job-training <ul style="list-style-type: none"> Introducing a local counterpart entity/agency for managing a pilot trial Providing supporting services to facilitate a pilot trial (Govt. permission and approval process, license process, site arrangement, etc.) 	PMU (Marketing & Post-Harvesting Division)	PMC
3	Strategy 3: To regulate fair and competitive agricultural marketing system			
3.1	Modernizing facilities and equipment in Mandis	Facility construction of 13 mandis (APMC) <ul style="list-style-type: none"> Jassor (Kangra) Passu (Kangra) Chauribihal (Kulu and Lahaul &Spiti) Patlikuhal (Kulu and Lahaul &Spiti) Khegsu (Kulu and Lahaul &Spiti) Takoli (Mandi) Bhattakuffar (Shimla and Kinnaur) Tapri (Shimla and Kinnaur) Ghandoori (Sirmaur) Khairi (Sirmaur) Solan (Solan) Vaknaghat (Solan) Kunihar (Solan) 	PMU supported by HASAMB	Local contract or/ suppliers
3.2	Empowerment of CAs	Trainings <ul style="list-style-type: none"> Concept of fair trading and necessary skills of auction management Laws and regulations related to agri-marketing business Quality standards, grading and evaluation of agri. produce Post-harvest management of agri-produce Sanitary management of market facility and agri- produce Market information system (eNAM, EMI cell of HPSAMC, etc.) Business Management (business planning, financing, accounting, documentation & filing, computer operation & communication, etc.) 	PMU supported by HASAMB	PMC/Local Experts hired by PMU

3.6.2 Bringing FPOs up as a Business Entity

FPOs shall be mobilized and empowered as a federation of village based KVAs. FPOs are core units in developing a cluster of agricultural marketing and processing industries and they are part of the Mega Food Park scheme. Empowerment of FPOs as an independent business entity is therefore must, the most real challenge of the project. As shown in the following FPO Growth Framework, considerable efforts should be strategically taken (with long term perspective plan) to

encourage FPOs to be a self-standing, competitive and sustainable business entity to increase bargaining power in the marketing activities. While a continuing public intervention should be well arranged in accordance with the development stages of FPOs, the interventions in the beginning stage is the seeds – early stage must be crucial for incubating independent FPOs.

Table 3.20: Growth Framework of FPOs

Growth Framework	Seeds-Early Stage (0 ~ 5 years)	Expansion Stage (6 ~ 10 years)	Mature Stage (over 11 years)
Business Management Strategy	To solidify the foundation for robust organization and good business management To attain basic skills and knowledge	To deepen the attained skills and knowledge and the management system To expand of the organization	To continue a self-sustaining development of the business
Business Model	Collective marketing Contract farming	-Collective marketing -Collective purchasing of inputs -JV agri-business operation (marketing & processing)	Collective marketing Collective purchasing of inputs Independent agribusiness operation (marketing & processing)
Public Intervention	Mobilization, trainings (business management & technology), information dissemination (market new technology, supporting schemes, laws & regulations, etc.), matching with private business operators, financing, etc.		

3.6.2.1 Formation and Formalization of FPO

One FPO is composed of around 300 farmers are the members of KVA. The procedure in forming of FPO is assumed as follows:

The steps are as follows:

Table 3.21: Procedure of forming FPO

Step	Timeline	Procedure	Description	Executed by	Supported by
Step-1	1st year	Conduct farm management training by the Project to raise Farmer's awareness	Each KVA provides information on its present farming and prepare the farm income target and strategy.	BPMU	DPMU PMC
Step 2	1st to 2nd year	Conduct cultivation training and demonstration by the Project	Confirm the technical skills and real motivation of farmers in KVA	BPMU	DPMU PMC
Step-3	End of 2nd year	KVAs candidate to be member of FPO	Motivated and skilled KVAs will autonomously candidate at the beginning based on motivation of farmers to participate in FPO	BPMU	DPMU PMC
Step-4	3rd year	Awareness meeting	Provision of awareness meeting on benefit of formation of FPOs and	DPMU	PMC

Step	Timeline	Procedure	Description	Executed by	Supported by
			necessary support from the Project		
Step-5	3rd year	Select initial members (KVAs) of FPO	Discussion among candidates for establishment of FPO	DPMU	PMU
Bringing FPOs up as a business entity will be started					
Step-6	4 th year	Conduct business management training by the outsourced experts	Intensive business management training will be provided to member of FPO	DPMU	PMU Outsourced experts
Step 7	4 th Year	Elaboration of FPO Business Plan	FPO elaborates Business Plan including the design of the Collection Center under the support of Outsourced experts	DPMU	PMU Outsourced experts

3.6.2.2 Implementation Process:

While Implementing the Above activities, following 2 important guidelines viz., Production Management and Value Realization Plan & JICA Vegetable Garden shall be taken into consideration.

Production Management and Value Realization Plan

Under HP Crop Diversification Promotion Project (Phase –II), development of Agri business is one of the important outputs for increasing the income of the farmers of the project area. Agribusiness development have two basic aspects, one is identification of farmers who are willing to produce commercial vegetable crops in bulk for marketable surplus and second is promotion of these commercial crops, which have high demand in markets as well as more number of buyers for the processing and value addition purposes.

The project has placed a strong emphasis on **Production Management**, involving the integration of modern scientific techniques into the cultivation of vegetables or high-value crops. This approach aims to optimize the utilization of resources such as land, water, inputs, labour and management skills to efficiently produce crops for commercial purposes. The Key to production management is the strategic planning of crop selection, ensuring farmers to cultivate different varieties with high market demand to secure favorable prices.

Additionally, the project recognizes the importance of **Value addition** to agricultural commodities. By incorporating processes such as packaging, processing and branding etc. it aims to extend the shelf life of produce and establish robust market linkages. This comprehensive approach not only enhances the profitability of farming operations but also strengthens agricultural communities by promoting sustainability and creating opportunities for market expansion and economic growth.

Extension Officers working in DPMU/BPMU in collaboration with the beneficiary farmers of each sub project have prepared a Sub Project Development Plan (SDP) covering all important components enlisted in the project document. The plan shall be important as it provide baseline information for planning and realizing goals and objectives of Production management and value realization plan (PMVRP).

Moreover, PMVRP shall be helpful in forming framework for formation of Common Interest Groups (CIGs) for collective marketing and getting better prices for their produce. PMVRP shall be initiated under different stages Stage-I emphasis on production of that much quantity of produce which is able to handle easily and effectively with the support of project. Under Stage-II emphasis shall be given on conducting market surveys and drafting value realization plan. Whereas, Final Stage will be the establishment of FPO's and its linkage with buyers within the state/outside state so that ample experience of production can be acquired by the farmers. Development and strengthening of Farmers Producers Organizations (FPOs) as a business entity have also been specified in the MoD & 10 such FPOs shall be formed and established as sustainable agribusiness

Entities in state. Splitting of production can be expedited in a way that the produce of Stage-I can be disposed at local level through retailers, wholesalers etc. Preparing PMVRP shall definitely be important step forming these FPOs in due course of time.

3.6.2.2.1 Framework for initiation and implementation of the basic concept of Production Management and Value Realization Plan (PMVRP):

STAGE-I

I. Selection of Subprojects for PMVRP:

- At least one PMVRP will be prepared for each BPMU, immediately after availability of irrigation in the subproject areas. Extension Officers (EOs) are responsible for selecting subprojects where there is a high level of interest and commitment among farming community towards crop diversification. These subprojects serve as the focal points for implementing the initiative of PMVRP.

II. Sensitization and Preliminary Information :

- EOs shall conduct multiple sensitization workshops/meetings at the subproject level to introduce the concept of crop diversification and concept of PMVRP. Following preliminary information from Sub Project Development Plans (SDPs) of selected subprojects shall be compiled at BPMU level.

Table 3.22: Database on Land Resources & Human resources for PMVRP

Name of DPMU:

Name of BPMU:

S.N.	Name of Sub-projects	CCA (in ha.)	No. of Landowners	No of Custodians	No. of Cultivators	No. of Absentee farmers	Remarks
1							
2							
3							

(Source- SDPs)(*Imp Note- Sequence of sub-projects in each table should be same)

III. Identification of Eligible Farmers and Flagship crops for implementation of PMVRP:

- After identification of model subproject(s), select Advance farmer(s) for cultivation of vegetables and high value crops during 1st Stage in consultation with KVA members.
- If no advance farmer is available than, Near to advance/Intermediate (s) farmer may be selected.
- The number of flagship crops to be selected for PMVRP in a particular sub project should not be more than 2 Nos in each cropping season. As per SDPs flagship crops are listed, but there is need to validate the flagship crop as per the selected area and ensure consistency with neighboring subprojects, so as to formally select same crops within 10-15 km(approx..) radius of the particular subproject so that CIG/FIG could be formed for better bargain power in the marketing of produce. Also, it is important to note that crops listed in PMVRP should be best suited crops from SDPs of particular sub project.

Table 3.23: Detail of Farmers and Crops selected for PMVRP

S. N.	Name of Sub-project	Farmer's Detail			Land & Crop Detail				Remarks	
		Name & Contact No. of farmers	FRN	Category (Advance/N ear to advance)	CCA	Name of Flagship crop		Area (in Ha.)		Strategic crop of the zone (as per MoD)
						Kharif	Rabi			
1										
Total										

(Note: Not more than two crops per season shall be selected for implementation of PMVRP)

IV. Identification of Master Trainers:

- Identify best suited Master Trainers from within the subproject or vicinity or any other advance/experienced farmers with expertise in commercial vegetable cultivation, marketing strategies and local market dynamics
- Information collected in SDPs shall be considered while selecting final list of Master trainers.
- **Guiding Criteria for Identification of Master Trainers-**
 - ✓ He/She should be well conversant with existing marketing channels.
 - ✓ He/She should be commercial grower having at least 5 years of experience.
 - ✓ He/She should has at least of 5-10 kanal cultivable area.
 - ✓ He/She should be ready to share his/her experience and knowledge.

Table 3.24: Final selection Database on Master Trainers

S.N.	Name of BPMU	Master Trainer	Address and Contact Detail	Name of subprojects covered	Crop(s)	Remarks
1						
2						
3						

(Note- Number of Master Trainers may vary at each BPMU as per location of various sub projects)

V. Generation of Crop Production Plan and validation by Master Trainers:

Crop production plan within the subproject is designed to optimize yield and sustainability of PMVRP. Crop production plan for flagship crops selected in each PMVRP will be prepared after detailed discussion between EOs, MOs, Master Trainer and farmers. Drawing on the expertise and experience of master trainers in agricultural practices these PMVRP plans shall be refined and optimized to enhance their effectiveness. Once the plans are validated, EOs shall oversee the timely execution of the plans, providing support as needed to ensure successful implementation of PMVRP. The steps involved in preparation of Crop Production plan are listed below and has been enclosed under Sample format for PMVRP and same will be discussed during the ToTs session for EOs and MOs are as follows.

- i. Preparation of Subproject-wise Crop Schedule and Crop Calendars for the Coming Season:** Develop detailed schedules and calendars for each crop, tailored to specific subprojects, considering the upcoming season's conditions and requirements.
- ii. Preparation of Operating Plan for Each Crop Selected for PMVRP:** Create comprehensive operating plans for each Flagship crop chosen under the PMVRP, outlining the steps, resources and strategies needed for effective cultivation and management.
- iii. Calculation of Expected Sales and Profit:** Estimate the potential sales and profits for each crop by analyzing market trends, expected yields and cost structures etc. which will help to set realistic financial outcomes of the selected crop.
- iv. Subproject-wise monitoring of activities:** Implement a monitoring system to track the progress and performance of each subproject under PMVRP, ensuring that all activities are carried out as planned.

Further trainings and demonstrations in subproject along with various project intervention activities in each selected subproject of PMVRP will be finalized preferably from below mention cafeteria of activities and within the overall funds available under APO.

- ✓ **Activity: 2.2.3 Training cum method demonstration on cultivation practices of vegetables.**
- ✓ **Activity: 2.2.5 Food Grain Productivity Training and Demonstration.**
- ✓ **Activity: 2.2.6 Provision of Farm Machinery**
- ✓ **Activity: 2.2.7 Provision of Poly houses & poly tunnels**
- ✓ **Activity: 2.4.4 Provision of Plastic Mulching material**
- ✓ **Activity: 1.1.2 Micro Irrigation System etc.**

Eos shall also work with master trainers for conducting trainings and laying demonstrations. These trainings and demonstration shall be meticulously crafted to address the specific needs and challenges faced by farmers.

STAGE-II

I. Market Surveys and Market Stakeholder Forum:

- Market surveys play a crucial role in determining the various marketing channels for disposing of Stage-1 produce thereby, forming a vital component in the process of selecting suitable destination for farm produce
- In addition to considering the preferences of the subprojects and the suitability of crops to the area, it is essential to conduct **market surveys (as Table No 4)** to evaluate the market demand and potential profitability of the selected flagship crops. This involves analyzing factors such as consumer preferences, local market, market trends (within and outside the state) etc.
- Additionally, MOs and Eos shall facilitate vital interactions through **Market Stakeholder Meetings**, where relationships are built and key players are identified, fostering a network that supports farmers' market access and growth.
- Marketing Officers working in DPMU must have the information regarding price trends of flagship crops w.r.t concerned vicinity area/ district, which will support extension staff for finalization of crop calendar. They will also collaborate with EOs working in BPMUs and shall compile detail of existing marketing channels as per below mention table:

Imp Note: Market Surveys shall be conducted for selected flagship crops only.

Table 3.25: Market Survey Questionnaire for Retailers/Wholesellers/others

Date: ____/____/____

Name of District: _____ Name of Sub Market Yard/APMC/Other market:

Market Survey Conducted by: _____ Date:

Name & Address of Dealer	Flagship crop & Variety	Produce Quality & Market Requirements	Peak Demand (months)	Quantity & Frequency (daily/weekly etc.) of Supply	Unit Price per kg	Mode of Payment	Terms of Payment	Marketing challenges	Dealer's Willingness to purchase the Produce from the Group

Market Survey Questionnaire

Sample format

Date: 00 /00/ 20--

Name of District: Name of Sub-District: .

Name of the Farmer Group: XYZ

Market Survey Conducted by (names of farmer representatives): ABC

Table 3.26: Market Survey

Name & Contact of Produce Dealer	Produce & Variety	Produce Quality & Market Requirements	Peak Demand (months)	Quantity & Frequency (daily/weekly etc.) of Supply	Unit Price per kg	Mode of Payment	Terms of Payment	Marketing challenges	Dealer's Willingness to purchase the Produce from the Group
Mr. S. K. Tarders (0722-xxxxxx)	Tomato (any variety)	- Medium size - Half ripen	March, April, & May	1,000 kg/week	70/kg	Cash	Cash on Delivery	Inadequate storage Facilities	Willing
Ms.Chopra (0736-xxxxxx)	Tomato	- Large size - Half ripen	February & March	2,500 kg/week	50/kg	Online mode	Two weeks after Delivery	Inadequate storage Facilities	Willing
Ms. Bhaitia (0720-xxxxxx)	Tomato	- Medium size - Half ripen	December & January	2,500 kg/week	65 per kg	Cash	A week after Delivery	None	Not willing

Crop Calander under PMVRP																											
DPMU														BPMU													
Name of Sub-														EO in charge													
Year	Plot	Name of Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec													
2024	Plot-1	Cucumber							X	▲																	
		Peas																							X		
	Plot-1	Cucumber		X	▲																						
		Cauliflower							X	▲																	
		Cauliflower																						X	▲		

Figure 8: Crop Calendar under PMVRP (sample)

Table 3.27: Production Record

Record of Production			
BPMU			
Sub-Project			
Name of Farmer			
Crop			
Date of Harvest	Harvest in kg	Price/kg	Market (Village/Retailer/APMC/)

Table 3.28: Monitoring sheet

Sample Format			
Monitoring sheet			
BPMU			
Sub-Project			
Name of Farmer			
Crop	Cucumber		
Activity	Planned	Actual	Remarks
Arrangements inputs	April 15-25		Seeds/Trays/Agri-Chemicals etc.
Nursery Sowing	May-25		
Field/Plot preparation	June 01-10		
Transplanting	Jun-15		
Inter cultural operations			
Staking & training	June 22-25		training is continue process required at different stages of growth
Pruning	July 05-07		
incidence of petsts Name of insect/Disease Control measures adopted			On actual basis
incidence of petsts Name of insect/Disease Control measures adopted			On actual basis

Items & costs for 400m2 area (1 kanal)								
1. Cucumber								
Item		Qty/ kanal		Unit price (Rs)		No. of uses	Cost/ kanal	Memo
Bed preparation								
	Fertilizer (NPK=12:32:16)	12	kg	30	Rs/kg	1	360	
	FYM	1	Tractor	1500	Rs/truck	1	1,500	
Seedling production	Plastic Bag/ pot	400	pots	0.40	Rs/pot	1	160	Rs.200/kg for 500 pots
	Cocopeat	1	block	150	Rs/block	1	150	
	Seed of cucumber	1	pack	200	Rs/pac	1	200	
Staking materials	Bamboo post	126	post	10	Rs/pot	4	315	7 posts/ 1 bed 1 use for cucumber/year x 4 years
	Steel wire	6	kg	100	Rs/kg	4	150	324m = 6kg/ kanal 1 use for cucumber/year x 4 years
	Plastic mesh net	342	m	10	Rs/m	5	684	1m wide x 100m/roll, Rs.1000/roll 1 use for cucumber/year x 5 years
	Plastic rope	5	bundle	80	Rs/bundle	1	400	
Agro chemical	Fungicide	2	package	250	Rs/pac	1	500	100g/ package
	Insecticide	2	package	250	Rs/pac	1	500	100ml/ package
Labour cost	Plot/Bed preparation	2	person*day	500	Rs/day	1	1,000	Rs.50/person/h x 8h/day = Rs.400/person/day
	Nursery raising	1	person*day	500	Rs/day	1	500	
	Transplanting/Intercult	4	person*day	500	Rs/day	1	2,000	
Total cost/ kanal							8,419	
Total cost/ kanal, without Labour cost							4,919	
2. Cauliflower								
Item		Qty/ kanal		Unit price (Rs)		No. of uses	Cost/ kanal	Memo
Bed preparation								
	Fertilizer (NPK=12:32:16)	9	kg	25	Rs/m	1	225	
	FYM	1	Tractor	1500	Rs/truck	2	750	2 uses for cucumber & cauliflower, per 1 year
Seedling production	Plug trays	22	trays	35	Rs/tray	4	193	1 use for cauliflower/year x 4 years
	Cocopeat	1	block	150	Rs/block	1	150	
	Seed of cauliflower	1	pack	500	Rs/pac	1	500	
Agro chemical	Fungicide	2	package	250	Rs/pac	1	500	100g/ package
	Insecticide	2	package	250	Rs/pac	1	500	100ml/ package
Labour cost	Plot/Bed preparation	2	person*day	500	Rs/day	1	1,000	Rs.50/person/h x 8h/day = Rs.400/person/day 2 uses for cucumber & cauliflower for 1 bed
	Nursery raising	1	person*day	500	Rs/day	1	500	
	Transplanting/Intercult	5	person*day	500	Rs/day	1	2,500	
Total cost/ kanal							6,818	
Total cost/ kanal, without Labour cost							2,818	
Note : Farmers who has no poly-house shall use a low poly-tunnel (about Rs.5000/unit) with shade net/poly sheet for seedling production. Cost for low poly-tunnel is not counted in above estimation.								

Figure 9: Items & Costs (sample)

Table 3.29: Sales and Profit

Sample				
Expected Sales and Profit				
BPMU				
Sub-Project				
Name of Farmer				
Crop	Cucumber			
Time of Harvest	Expected Price	Expected produce in Kg	Sales Value	Remarks
Aug 05 - Aug 15	Rs. 15.50	300 kg	Rs 4650	
Aug 16 - Aug 26	Rs. 25.50	400 kg	Rs. 8925	
Aug 27 - Sep 10	Rs. 30.00	350 kg	Rs. 10500	
Sep 11 - Sep 20	Rs. 27.00	250 kg	Rs. 6750	
Sep 21 - Sep 30	Rs. 37.00	250 kg	Rs. 9250	
Oct 01 - Oct 10	Rs. 38.00	250 kg	Rs. 9500	
Oct 11 - Oct 20	Rs. 41.00	200kg	Rs. 8200	
		Total	Rs. 57775	
	Cost of Cultivation		Rs. 8419	
	Profit		Rs. 49356	
Note:				
1 Calculations are based on the crop schedule prepared on the basis on price trends available in the APMC Website during the year of 2023				

Table 3.30: Final List of Market Stakeholders

Sr. No	District	Sub-project	Detail of Retailer			Detail of Nearby Market yard/ APMC			Detail of out of district/state markets		
			Name	Contact Detail	Crop	Name	Contact Detail	Crop	Name	Contact Detail	Crop
1											
2											
3											

Roles and Responsibilities of EOs and MOs in consultation with Master Trainers:

- Facilitates in sensitizing farmers to encourage the cultivation of vegetable crops.
- Helps in developing a crop calendar tailored to different seasons.
- Identifies gaps, challenges and solutions to various field problems.
- Coordinates various exposure visits to nearby fields showcasing vegetable and high-value crop cultivation.

- Helps in establishing marketing channels for their produce and conducts local market surveys both before and after crop planning.
- Prepare Crop schedule and production plan keeping in view the previous year's price trends/ fluctuations in the local market/APMC/other.

II. Value Realization Plan :

A Value Realization Plan is one of the most important aspect for realizing value of farm produce and shall serves as motivating factor for organizing farmers into various groups viz CIG/FPOs. It is a comprehensive strategy aimed at maximizing the economics of return and overall value generated from the cultivation, distribution and sale of vegetables.

This plan encompasses various aspects, including crop selection based on market demand and profitability, efficient farming practices to optimize yields while minimizing input costs, strategic marketing initiatives to reach target consumers effectively.

Initially, extensive market surveys are conducted to gather crucial data on consumer demand, market trends etc. To achieve this, Marketing Officers (MOs) and Extension Officers (EOs) collaborate with farmers to develop a precise crop schedule tailored to meet market demands. After the implementation of the crop diversification plan, the responsibility of marketing the produce falls upon the teams of BPMU and DPMU. Also, EOs must align their strategies with the targets set in the MoD.

Marketing Officer, are also tasked with evaluating the **quantity of produce** from farmers and strategically allocating it to different markets by considering the requirements and preferences of retailers, wholesalers and other players in the market.

Table 3.31: Subproject wise Value realization Plan (sample)

S. N.	Sub-project	Name of farmer	Flagship Crop	Area (in ha)	Harvesting time	Produce (in Qtl.)	Identified Market (Quantum of produce with various market stakeholders) (in Qtl.)			
							Retailer	wholesaler	outside	Other
1	A	abc	Tomato	1.5	May end – Oct to Aug	750	10	740	-	-
Total										

By implementing a well-designed PMVRP as mentioned in below mention table, farmers can not only increase their revenue but also contribute to food security, promote rural development and foster a more resilient and sustainable agricultural sector.

Cumulative Information on PMVRP:

Table 3.32: Abstract on Cluster under PMVRP

S.N.	Name of BPMU	Name of PMVRP	Total No. of clusters formed	Total No. of sub projects	Remarks

Table 3.33: Abstract on Sub project selected under PMVRP

S.N.	No. of Sub project	Total CCA	Total Land Holders	Total Custodians	Total Cultivators	Total absentee Farmers	Total No. of advance farmers	Total area for PMVRP	Total Flagship Crops	Remarks

FINAL STAGE

(Formation of CIGs/FPOs)

The PMUs shall also plan to organize these advanced/near to advance farmers into one or more Common Interest Groups (CIGs) across the subproject, cluster, considering the workability of the farmers as an organizations i.e. group. Mainly the PMVRP shall be the main criteria in forming/defining CIGs.

This way, CIGs shall be formed to take on one to two commercial crops in a cropping season. Complete crop calendar and package of practices for specified land need to be designed, followed by the input sharing by the farmers and the project. At the time of execution of PMVRP by the concerned CIG's, the quantity and quality of the produce shall be finalized and accordingly agribusiness operators, buyers, processors also need to identified, shall be identified and roped in.

Success of these CIGs depends on the following terms:

- Working as a group
- Production of crops according to the defined standards of quality and productivity as per the PMVRP of particular BPMU.
- Disposal of the produce on time and with higher price range based on market information.
- Effective integration of Master trainee (farmers) in upgrading the skill of the CIG's in crop production & agribusiness operators, buyers or processors shall be the key in furthering and expansion of the crop production in the coming cropping season vis-a-vis expansion of area by the existing CIG members or inclusions of new members.

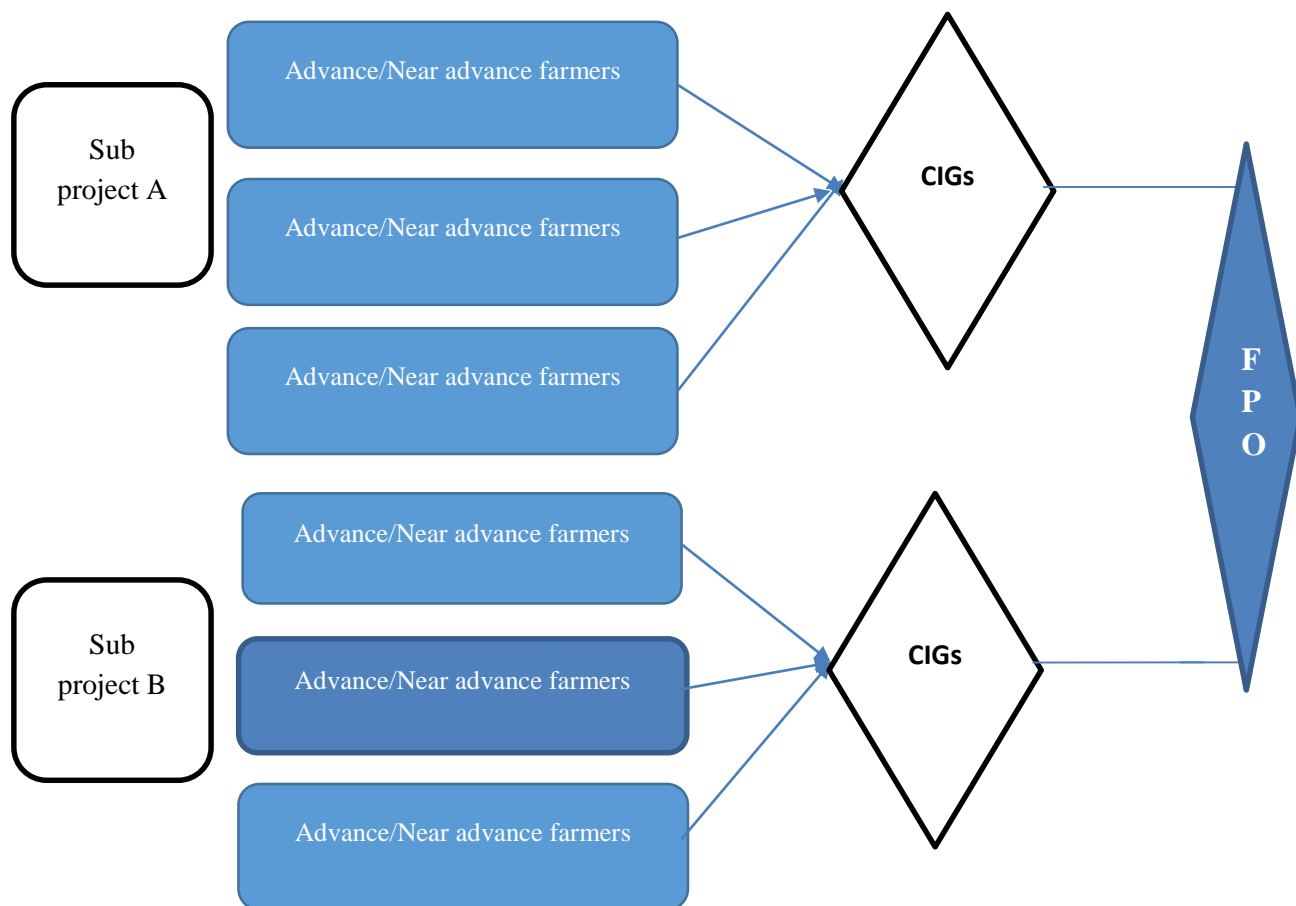


Figure 10: Formation of CIGs and FPO

III. Monitoring and Evaluation:

The successful execution of the PMVRP demands rigorous monitoring in the field. It is crucial to cross-verify complete activities and promptly address any gaps in achievement. The District Project Management Unit (DPMU) team, comprising the District Project Manager (DPM), Subject Matter Specialists (SMS), Marketing Officers (MO) and Agriculture Expert (AE), shall be responsible for approval and monitoring PMVRP of each BPMU by conducting meetings of BPMU staff regularly to monitor the progress of PMVRP. The proceedings of such meetings shall 'be shared with SPMU. Team at SPMU will also regularly monitor the progress of PMVRP.

Table 3.34: Status of Approval of PMVRP

Sr. No	Date of preparation of draft PMVRP	Date of approval of PMVRP by DPMU	Date of Review by SPMU	Remarks
1				
2				
3				

Table 3.35: Monitoring of PMVRP

Sr.No	Name of Sub Project	Name of farmer	Flagship crop	Area		Production		Marketing Channel	
				Planned	Actual	Planned	Actual	Planned	Actual
1									
2									
3									

The Production Management and Value Realization Plan (PMVRP) within the HP Crop Diversification Promotion Project (Phase-II) is a comprehensive strategy designed to uplift farmers' incomes in H.P.

This initiative prioritizes the integration of modern agricultural practices and the establishment of robust market connections. By meticulously selecting subprojects and engaging motivated farmers, the PMVRP aims to cultivate high-demand commercial crops. Through strategic crop selection, detailed planning, and the identification of flagship crops, the PMVRP seeks to optimize resource utilization and secure favorable market prices.

Moreover, by fostering the formation of Farmers Producers Organizations (FPOs) and Common Interest Groups (CIGs), the plan aims to enhance collective marketing efforts and strengthen farmers' bargaining power. With a strong focus on value addition and market orientation, the PMVRP is not only to increase agricultural profitability but also to foster sustainable rural development and economic prosperity.

3.6.2.2.2 JICA VEGETABLE GARDEN

INTRODUCTION:

A **Vegetable Garden** is an area dedicated to growing a variety of seasonal vegetable crops to fulfil the daily needs of families, groups of families and visitors such as teachers, bankers or nearby town residents, by providing fresh and healthy produce year-round. The JICA vegetable garden seeks to establish itself as a year-round center of excellence, exemplifying high standards in sustainable agricultural practices. Following are the points which should be followed while implementing Crop Diversification through implementation of JICA Vegetable Garden.

- ✓ Crop diversification initiative focuses on encouraging conservative and intermediate farmers to engage in kitchen gardening. This practice promotes the production of healthy food for their families by growing vegetables without the use of pesticides and fertilizers. Additionally, by adopting natural methods, these farmers can produce safe and nutritious vegetables, ensuring better health for their families.
- ✓ JICA Vegetable Garden initiative involves establishing "vegetable gardens" in each subproject area to create local vegetable markets.
- ✓ These gardens are more advanced than kitchen gardens but less intensive than commercial farms, providing a balanced approach to vegetable production.

- ✓ Targeting local retailers and organizations such as schools, banks, and medical facilities, these gardens aim to supply a variety of healthy vegetables to the community. By offering a centralized location for fresh produce, the JICA vegetable gardens make it easier for local consumers to access nutritious vegetables, enhancing community health and promoting sustainable agricultural practices.
- ✓ This approach targets advanced farmers from the subproject areas, Self-Help Group (SHG) members and other interested farmers, who can participate individually or collaboratively.
- ✓ Each village shall allocate 0.5 to 1.0 acres of land for the commercial production of selected crops as part of the JICA Vegetable Garden initiative.

OBJECTIVES

1. To transform the village into a favourite destination for families, attracting them with its well-maintained and productive vegetable gardens.
2. To make the village evolving into an Agro-tourism hotspot, where visitors / young school or college students can experience and learn about Vegetable gardens, thereby boosting local tourism and the economy.
3. To provide support to various potential participants, including Self-Help Groups (SHGs) / Farmer Groups (FGs) and individual farmers, ensuring their sustained empowerment and prosperity.

ADVANTAGES OF VEGETABLE GARDEN

- **Efficient Land Use:** Vegetable gardens optimize land utilization by producing essential crops for multiple families and neighbouring farmers, maximizing productivity per unit area.
- **Cost Savings:** By growing their own vegetables, families can significantly reduce expenses, as fresh produce tends to be expensive in markets.
- **Year-round Supply:** Village gardens ensure a consistent and reliable source of vegetables throughout the year, mitigating seasonal scarcity and dependence on external markets.
- **Pesticide-Free Produce:** Home-grown vegetables allow for control over pesticide usage, ensuring a supply of residue-free produce for healthier consumption.
- **Healthy Hobby:** Gardening serves as a fulfilling pastime, effectively utilizing family leisure time while promoting physical activity and mental well-being.
- **Community Cooperation:** Vegetable gardens foster a spirit of collaboration within the community, encouraging collective effort and mutual support among residents.
- **Educational Opportunities:** Gardening provides valuable hands-on learning experiences for children, imparting practical knowledge about agriculture.
- **Income Generation:** Participation in vegetable cultivation can generate supplementary income for farmers through the sale of surplus produce, contributing to household finances and economic stability.
- **Diversification:** In addition to vegetables, village gardens can accommodate small fruit trees like lemons, papayas, bananas, enhancing the diversity of produce and offering additional nutritional benefits.

KEY POINTS FOR JICA VEGETABLE GARDEN

Selection of Model Sub-Projects: Priority will be given to sub-projects designated as Model Sub-Projects, with a focus on those incorporating SHEP activities.

Initial Opportunity Assessment: A preliminary evaluation will be conducted to identify suitable land parcels ranging from 0.5 to 1.0 acre for the JICA Vegetable Garden project. These parcels may consist of contiguous or multiple patches of land.

Mobilization of Women Farmers: Preference will be accorded to mobilizing women farmers residing in the village, aiming to enhance their participation and empowerment within the project.

PROCEDURE FOR ESTABLISHING JICA VEGETABLE GARDEN

- i. **Convene a Meeting:** Organize meeting of interested farmers or group to collaborate on establishing a Vegetable Garden on a contiguous plot of irrigated land measuring between 0.5 to 1.0 acres.
- ii. **Crop Selection:**
 - Engage participants to explore suitable vegetable crops for cultivation in the region during the prevailing season.
 - Encourage farmers to propose a diverse selection of crops to ensure a wide range of seasonal vegetables are available for their consumption.
 - Additionally, emphasize the importance of planning for potential surplus production to benefit other farmers within the village or neighboring areas.
- iii. **Support by Extension Officer (EOs):** Extension Officers (EOs) are readily available to farmer to provide necessary guidance and assistance to farmers throughout the cultivation process such as advice on crop management practices, access to quality seeds or seedlings and any challenges encountered during cultivation.

The JICA Vegetable Garden initiative represents a comprehensive strategy to revolutionize agricultural practices and community well-being within participating villages/sub projects. By adopting a multi-tiered approach, the project endeavors to cultivate not only nutritious produce but also a thriving environment for local farmers. Through the integration of kitchen garden creation of vibrant local markets and promotion of commercial farming, the initiative strives towards self-sufficiency and entrepreneurship within participating villages/sub projects.

Activities that will make FPO as an economic entity will be entrusted to National Bank for Agriculture and Rural Development (NABARD), Small Farmers Business Consortium (SFAC) or other qualified service providers, which have a track record of launching and supporting FPO. PMC provides technical advice on how to proceed the incubation of FPO with training material.

PMU will set up a special division named “**Marketing & Post-harvesting**” for dedicating various supporting services to FPOs.

The trainings shall be provided by qualified service providers hired by PMU as well as Experts in Business Management / Service Providers hired by PMU. In addition, the corpus fund will be launched in the project to strengthening of financial status of FPOs.

TOR for Implementing Agency (NABARD etc.):

- Implementing Agencies will set up clusters at district level to form and promote FPOs. However, targets for produce clusters, will be allocated by SPMU.

- Implementing Agencies will closely and cohesively work with clusters to ensure that clusters perform their activities to make FPOs economically sustainable.
- Community Mobilization – base-line survey, cluster finalization, value chain study, formation of groups and FPO and assist in their periodic meetings. They may seek the assistance of Local Bodies, wherever feasible in identification of proper produce cluster and mobilization of members.
- Registration of FPOs and training of Board of Directors (BOD) on roles, responsibilities, management and also capital/ equity mobilization.
- Training and capacity building of FPOs/Farmer Groups:- Training Needs Identification, developing training modules, conducting basic training/workshops and exposure visits.
- Encourage and promote social cohesiveness amongst members of FPOs
- Preparation and execution of ‘Business Plans’ for long-term sustainability of FPO. Business plan preparation (for different incubation services), acquiring land, mobilizing equity capital and implementation of Business Plan while assisting in input management, adoption of proper and good agricultural practices through knowledge sharing, aggregation of produce, quality management, assaying, processing, packaging, supply chain development and marketing and market linkages with buyers/processors/exporters, trading, export etc. as may be necessary to ensure long-term sustainability of FPOs
- Assist FPO in availing Equity Grant and Credit Guarantee Facility as per need and growth.
- Provide support and monitoring in terms of incubation activities; capacity building of BODs and FPO management for sustainability. The incubation/handholding services include ensuring input, market linkages, preparing and implementing related business plans.
- Implementing Agencies will also ensure regular data supply to integrated portal of SPMU with respect to details of respective FPOs
- Implementing Agencies in consultation with SPMU will formulate rating tools for FPOs to assess them in terms of level of activity, economic viability and sustainability, etc. The rating of the FPOs can be used as an instrument to promote FPOs.
- Implementing Agencies will prepare Annual Action Plan and submit to SPMU in advance for consideration of PMC along with prescribed Utilization Certificate.

3.6.3 Establishment of FPO’s Collection Centre:



Figure 11: FPO’s Collection Centre

3.6.3.1 Construction of collection centre including warehouse:

3.6.3.1.1 Procurement of machinery & equipment and O & M training:

The Project shall support at most 10 FPOs to develop a collection centre for aggregating and primary processing of harvested crops before marketing with necessary facilities and equipment such as Warehouse, Post-harvest Operation Hall & Storage, Handling Tables, Conveyors for grading, Washing Machine, Pre-cooling cabinet, Weighing & Packing Machine, Office, Computer System, Vehicle (Truck) etc. The actual components and specifications shall be determined based on FPO's Business Plan considering actual needs (kinds of produces, volume of aggregated produces, etc.) of each FPO. In case FPOs are interested in ICT technology, they are able to procure digital devices and apps as a part of this component.

The construction of 'Collection Centre' shall be carried out along the main road in a place that is easily accessible by both producers and distributors and where land can be secured. The construction of Collection Centre will be carried out by the local contractor based on DPR prepared by PMC. BPMU engineers will supervise the construction work. The facilities required for Collection Centre will be procured through local supplier based on the contract with DPMU.

3.6.4 Corpus Fund for sustainable activities of FPOs

FPOs need to secure operational cost to purchase the produce from its member farmers. However, it is a challenge for FPOs to access financial services due to lack of collateral. The Project will take steps to provide FPOs with financial access by creating corpus fund to fulfil the needs of FPOs by the time they acquire adequate credibility to borrow from other financial institutions.

The Corpus Fund would be managed by PMU in the form of fixed deposit based on the business plan; the interest accruals shall be used by the FPO. The SHG's/other groups can also avail of loan through Micro Finance Company supported and promoted by the Corpus Fund for processing and value addition activities on the similar terms and conditions and the details of operation and maintenance of corpus funds are being framed up by PMC in consultation with the SPMU Officials and to be sent to JICA for their consent for its implementation.

The information below will be examined by PMC in project implementation stage;

- Fund governance structure and management rules
- Fund management, including risk assessment
- Loan Eligibility criteria
- Loan size and nature of loans
- Loan appraisal rules and procedures, duly simplified
- Monitoring, reporting and countermeasures against default
- Possible relationship with financial institutions like NABARD

3.6.5 Matching FPOs with Agribusiness operators:

A registration system of agribusiness operators including Commissioning Agent (CA) in Himachal Pradesh, the agribusiness operators in the other states who are interested in running a business in the state and FPOs in the state (not limited to the 10 FPOs) shall be operated by the Project in cooperation with Ministry of Food Processing Industries (MOFPI), Department of Horticulture (DoH) and Department of Agriculture (DoA). The Project shall provide various supporting services, e.g. disseminating information about agribusiness in the state, organizing investment seminars, intermediating FPOs and agribusiness operators, introducing available government schemes, etc.

to the registrants in order to facilitate a joint business operation between FPOs and agribusiness operators.

Project shall provide necessary services to facilitate pilot business trials to agribusiness operators. The services shall be provided by PMU in collaboration with PMC. Trainings to staff of the Marketing & Post-harvesting Division of PMU shall be actively provided on on-the-job-training basis to prepare a sustainable operation of this sub-component in future.

Matching with private companies and pilot business trials will be conducted by FPO personnel in SPMU and supported by PMU. Since the pilot business trial will be conducted at the Center of Excellence established in the project, the KVK and SAU will also be involved in the activities.

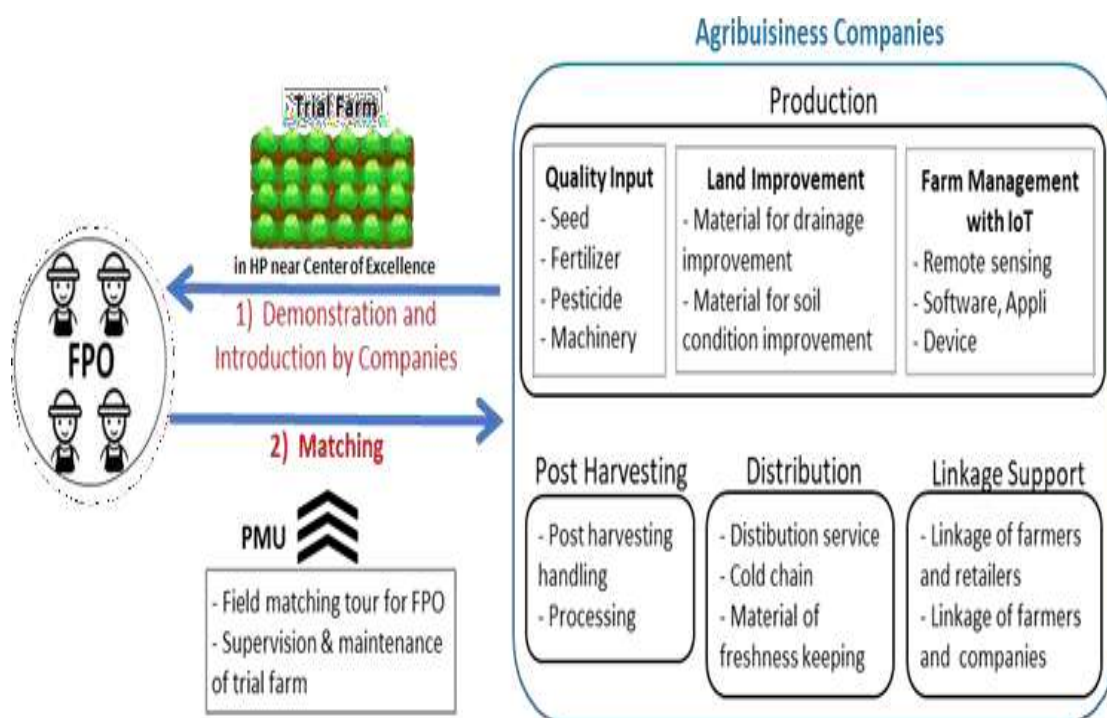


Figure 12: Outline of Matching FPO with Agribusiness Operators

3.6.6 Facilitation of Demonstration farm / Pilot business trials:

For the support for collaboration between farmers, buyers and private agribusiness companies the Project plans to prepare demonstration farm in (1) the Centre of Excellence (COE), (2) DoA's Seed Farms and Testing Farm in SAU for demonstration as well as testing of agribusiness companies' services or technologies in order to encourage matching between farmers and the above mentioned companies. In addition, the project provides the support such as disseminating information about agribusiness in the state, intermediating FPOs and agribusiness companies, introducing available government schemes, etc.

A part of the field to be developed in COE, DoA's seed farms and SAU will be made available for testing and demonstrating of seed and other inputs of private companies on PPP mode, in a way to test private company's seed and other inputs. Field in SAU is for testing the applicability of agricultural input, while field in COE and DoA's seed farms are used for demonstration for farmers. COE and DoA's seed farms are also expected to become an entry points for private companies and FPOs, where they can find business partner through demonstration and information exchange. Based on Memorandum of Understanding between COE/DoA's seed farms/SAU and private companies, COE/DoA's seed farms/SAU will provide daily farm management for the products by private companies.

Table 3.36: Operational Procedure for Demonstration Firm at COE

Name of Activities	Description
Construction of Centre of Excellence (COE)	<p>2 Centre of excellences with the following specs will be constructed;</p> <ul style="list-style-type: none"> - Hi-tech Green House: 560 sqm - Fan & Pad system - Shade net house with covered area of 250 sqm - Solar PV pump (2HP) - Shallow Tube Well
Establishment and Operation of Platform	Marketing and Post-Harvesting Division in SPMU will set up platform to connect with private companies. As a part of the operation of platform, a list of private companies as potential partner will be updated accordingly and information on demonstration farm will be transmitted to private companies in the platform.
Field demonstration	COE will take care of plots for demonstration of private companies based on the technical requirement by the companies.
Extension to farmers	In case the results of demonstration are promising and farmer groups or individual farmers is interested in the agricultural input, SPMU facilitates extension to farmerson cost sharing basis with the private companies.

Testing at Palampur University**Table 3.37: Component Testing**

Name of Activities	Description
Preparation of field	1 ha in SAU and 0.1 ha in COE will be prepared for testing/demonstration field. Field in SAU will be divided into 10 plots with 0.1 ha for each plot.
Public relation	Marketing and Post-Harvesting Division in SPMU will set up platform to connect with private companies. As a part of the operation of platform, information on testing/demonstration field will be transmitted to private companies in the platform.

Coordination and preparation of MOU	Once private companies interested in the testing/demonstration in the field, Marketing and Post-Harvesting Division in SPMU will coordinate between the companies and SAU/COE with support from PMC. In case of SAU, MOU will be prepared by SAU while SPMU prepares MOU for COE.
Field testing/ demonstration	SAU and COE will take care of plots for testing/demonstration of private companies based on the technical requirement by the companies.
Extension to farmers	In case the results of testing/demonstration are promising and a farmer group is interested in the agricultural input, SPMU facilitates extension to farmers on cost sharing basis with the private companies.

PMU (Marketing & Post-Harvesting Division) is the executing agency whereas PMC is responsible for implementation of this activity.

3.6.7 Modernizing Facilities and Equipment in Mandis:

Though diversification of agricultural marketing is progressed with GoI's policies, mandis must remain having a leading role in supply-chains of vegetables and fruits. It is reported that many mandis have a problem of poor facilities and equipment in their proper operation. As per MoD, the facilities and equipment of selected mandis located at transaction hub centers should be modernized. Activities to renovate the market will be entrusted to Himachal Pradesh State Agriculture Marketing Board (HPSAMB) with the necessary funds after SPMU. Accordingly, HPCDP will provide funds worth Rs. 31.01 Crores to Himachal Pradesh State Agricultural Marketing Board Shimla (HP) for modernizing facilities and equipments in 13 *mandis* enlisted in the Project Document, mentioned here under. MoU shall be signed between HPCDP and HPSAMB for execution of various interventions in said market yards. The detailed design for the works shall be made in accordance with actual needs of each Mandi. Utilization certificate of funds will be provided by the Board to the project after completion of works.

Table 3.38: Budget outlay for different market yards

Sr. No.	Name of APMC	Name of market yard	Funds Provisions (Crores)
1	Kangra	Jassur	1.50
2	Kangra	Passu	1.25
3	Kullu & LS	Chauribihal	2.85
4	Kullu & LS	Patlikuhal	0.45
5	Kullu and LS	Khegsu	0.09
6	Mandi	Takoli	8.30
7	Sirmaur	Nohradhar	1.85 (Site has been changed from Bhatta Kufar vide JICA India concurrence letter no. JICA (ID) 2021-1058 dated 21-03-2022)

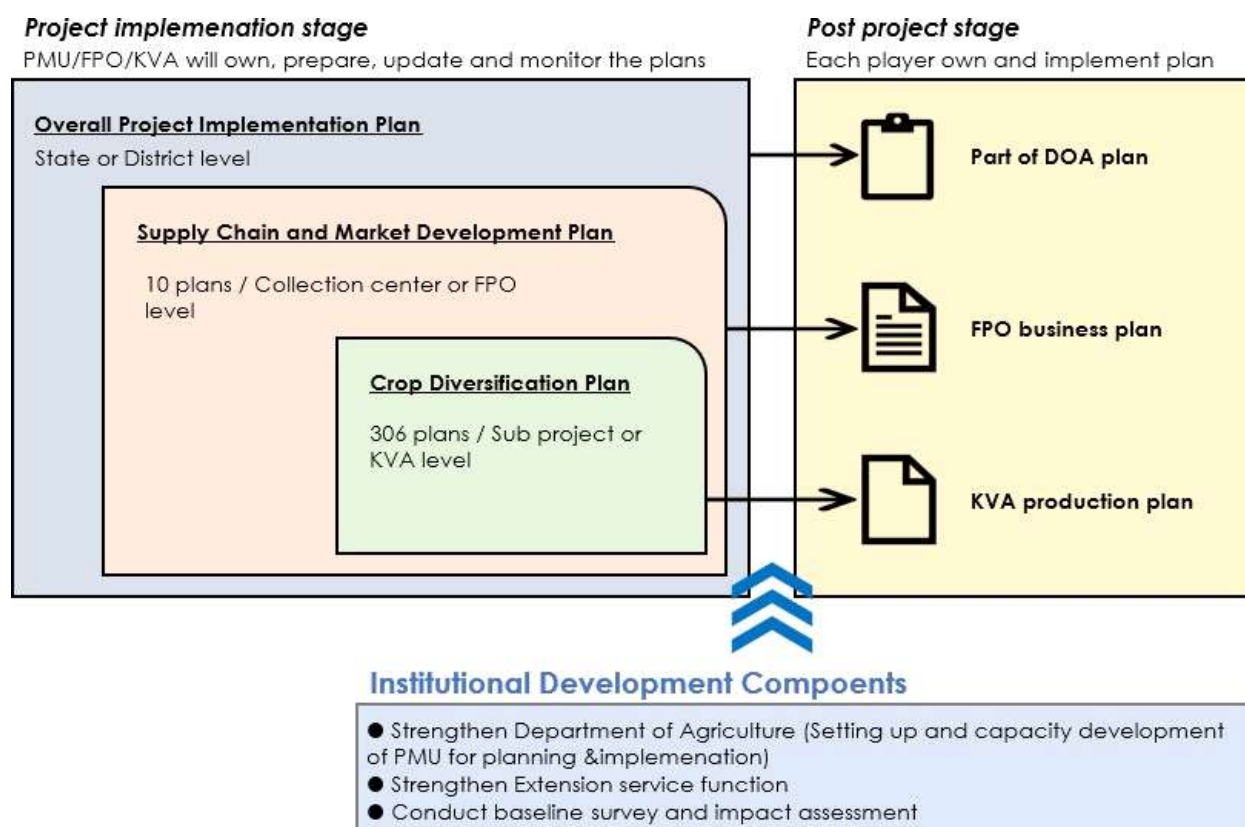


Figure 14: Management Plans for Various Activities under the Project

Various activities of project will be managed through three layers with three plans namely (1) overall implementation plan, (2) supply chain and marketing plan and (3) crop diversification plan. Three plans will be owned by (1) PMU, (2) FPOs and (3) KVAs during the project implementation period and will be formulated and updated as necessary, after the project is completed, DOA will take over the overall plan, FPO will own the supply chain and marketing plan and crop diversification plan will be owned and implemented by KVA.

3.6.8.1 Training and capacity building of CAs

The empowerment of CAs comprised of the following capacity building activities mainly assessing training needs and preparation of training and capacity building plan, training modules, training plan, organizing resources for the trainings and subsequently imparting training in related thematic subjects such as:

Trainings

- Concept of fair trading and necessary skills of auction management
- Laws and regulations related to Agri-marketing business
- Quality standards, grading and evaluation of agri. produce
- Post-harvest management of Agri-produce
- Sanitary management of market facility and Agri- produce
- Market information system (eNAM, EMI cell of HPSAMC, etc.)
- Business Management (business planning, financing, accounting, documentation & filing, computer operation & communication, etc.)

The execution agency is PMU with support of the HASAMB. The PMC/Local Experts, hired by the SPMU, will be executing the training programs.

3.7 Institutional Development Component

This component will be implemented through four activities viz., Strengthening of DoA, Strengthening of Extension Service Function, Baseline Survey and Impact Assessment and Gender Mainstreaming. The contents under the component have been decided after considering the lesson learned in Phase-I, keeping in mind to build a system and mechanism that can sustain the project results even after the project completion.

3.7.1 Strengthening of DOA:

Strengthening of DoA is an activity mainly for efficient and smooth project management, including establishment of PMU and capacity building of staff. The Strengthening of Extension Service Function is not specific to the project, however, aims to raise the level of the technology extension system of the entire DoA.

This activity mainly aims to strengthen the capacity of PMU necessary for project implementation. The contents are employment and capacity building of PMU staff, procurement of necessary materials and equipment, planning and monitoring introduction of ICT and MIS system.

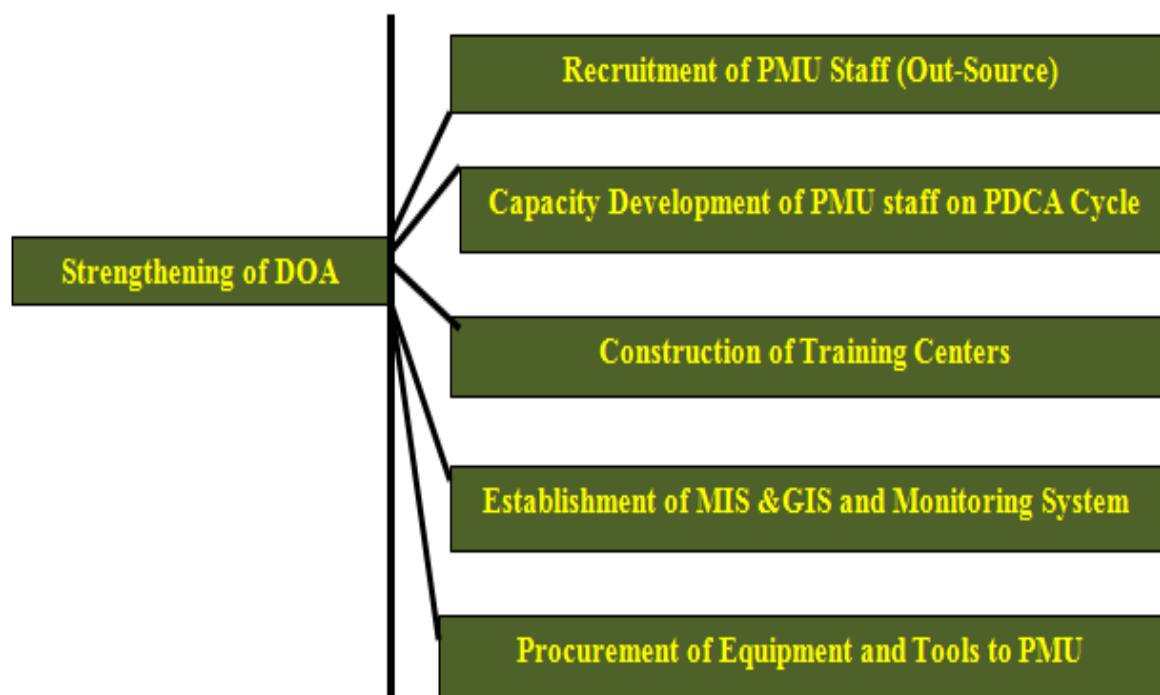


Figure 15: Strengthening Strategy for Dept. of Agriculture

As it is difficult to understand the connection and purpose of each activity due to the wide range of activities, the project will strive to have a common understanding among the PMU staff and other stakeholders through this sensitization training. After that, the PMU staff will be provided with knowledge of project cycle management and basic knowledge to carry out the project. The contents of the capacity development training to be organized during the project period are as follows:

Table 3.39: Contents of the capacity development training

Table 3.5.5: Contents of the capacity development training				
Type of Training	Contents	Target	Quantity	
			Unit	No.
PDCA Cycle Management	(1) Orientation workshop of PMU staff	All PMUs	time	4
	(2) Awareness on project cycle management and community participation in the planning process			3
	(3) Training of District & Block Project Manager on PIM, PRA andCDP	DPMsBPMs		2
	(4) Conceptual Training for PMU staff on PDCA cycle	All PMUs		3
	(5) Exposure visit of PMU staff to other state	All PMUs		8
	(6) Peer learning workshop	DPMUsBPMUs		60
	(7) Organizing periodical review meeting and workshop	DPMUsBPMUs		50
	(8) HRD training on team building, leadership, motivation / inspirationand stress management	All PMUs		76
Agriculture Extension	(1) Farming practices on common and exotic vegetables with field exercises	BPMUs		8
	(2) Protected cultivation with field exercises			8
	(3) Integrated Pest Management			8
	(4) Integrated Nutrition Management			8
	(5) Soil analysis and soil health management			8
	(6) Market-led extension			8
	(7) SHEP approach			8
	(8) Food diversification/nutrition improvement/ gender mainstreaming			8
Engineering	(1) Application of the Guideline and Check list			8
	(2) Data preparation and record keeping of pre-condition of each sub-projects			8
	(3) Design of Pumping machinery			8
	(4) Collaboration with extension officers for O&M activities / gender mainstreaming			8
	(5) Organization of design documents			8

3.7.2 Establishment of MIS & GIS and Monitoring System:

By developing MIS & GIS and monitoring system, the Project aims to improve efficiency and effectiveness of each component as under:

- Infrastructure Development: Proper and faster designing of schemes

- Farmers' Support: Creating interface with farmers for daily monitoring and addressing issues farmers face in their field (virtual mode of extension)
- Value Chain and Market Development: Market Information Collection, analysis and providing with farmer (groups) through internet/mobile devices.
- Institutional Development: Effective training courses.
- The PMC expert on MIS/GIS shall be responsible for setting up of the system and its Operationalization.

3.7.3 Construction of Training Centres:

Table 3.40: Construction of Training Centres

Particular	Description
Number of Facilities	5 nos.
Location of the Facility	Within DPMU Hamirpur (two facilities), Palampur, Mandi, Solan
Outline of Facilities tentative subject to change by SPMU depending upon site and need.	Ground floor Parking area 1 st floor Meeting room (7.15 x 6.97 m) x 1 no. Dinning place (5.30 x 4.75 m) x 1 no. Kitchen with necessary facilities (3.67 x .65 m): 1 no Chowkidar Room (3.67 x 3.00 m) x 1 no. Bathroom x 2 nos.Storage () x 1 no.2 nd floor Training hall (12.00 x 13.00 m) x 1 no.Bathroom x 2 nos. 3 rd floor Utility space for lodging etc. x 1 no.Bathroom x 2 nos.
Management	The owner of this facility would be DoA, however the utilization of the facility would be done by the Phase-II Project for most of the time. Therefore, during the project period, O&M responsibility would be of the project for which funds shall be raised partly by cost sharing under P-P work & partly from HP Agriculture Development Society funds. Deputy Director of Agriculture take responsibility of the facilities under the supervision of Director of Agriculture in the State after the project completion.

3.7.4 Procurement of Equipment and Tools to PMU

Table 3.41: Procurement of Equipment and Tools to PMU

Items	Amount		Remarks
Rented accommodation for office space for District. PMU	168	months	2 DPMUs, 7 years
Rented accommodation for office space for Block, PMU	840	months	10 BPMUs) 7 years
Furniture & office-equipment, (New PMUs)	7	location	Required furniture for staff in new PMUs
Replacement/ updating of Furniture	12	location	Additional furniture for Existing PMUs
Transport facilities at PMU (multi utility vehicles & sedan or equivalent) Procurement of new vehicles & motorcycles, hiring up of	L.S.		Procurement of 3 vehicles (SPMU 3) sedan vehicle equivalent and hiring of 24 No. MUV (SPMU, DPMU 08, BPMU 14),

vehicles including operational cost.			(20) Motorcycles & (20) Scooty
Publicity events, public awareness materials, inaugural ceremonies of sub projects	LS		
Hiring of support services	192	Man Month	Need based experts 192 MM on Intermittent basis
Project Operational expenses	L.S		

3.7.5 Strengthening of Extension Service Function:

This activity is mainly aimed at strengthening the capacity and dissemination function of DOA staff. Activities include preparation of Information, Education and Communication (IEC) material for dissemination, capacity development of agriculture extension staff, capacity development of engineering staff, strengthening of research- extension-farmer linkages and joint visits, overseas training, exposure/ study includes visits of project staff and other stakeholders, upgrading of infrastructure of state agriculture management and extension training institute (SAMETI). These are activities that contribute to the sustainability of project results.

Table 3.42: Summary of the contents

Contents	Number of activities implemented	
	Unit	Number
(1) Posters	Site	306
(2) Wall writings & fixing of posters	Site	306
(3) Street plays on present situation and improvement	times	306
(4) Publication of handouts and manuals	Sum	-
(5) Preparation of video programs	Nos.	16
(6) Display of shows	Site	306
(7) Farmers' fair in each Cluster	Cluster	10
(8) Dissemination of technologies through demonstration	times	1,184

3.7.5.1 Preparation of Information, Education and Communication (IEC) Material for Dissemination:

Table 3.43: Capacity Development of Agriculture Extension staff

Type of Training	Contents	Target	Quantity	
			Unit	No.
Agriculture Extension	(1) Farming practices on common and exotic vegetables with field exercises	Extension staff in DDA & SMS office	time	24
	(2) Protected cultivation with field exercises	-do-		
	(3) Integrated Pest Management	-do-		
	(4) Integrated Nutrition Management	-do-		

Type of Training	Contents	Target	Quantity	
			Unit	No.
Engineering	(5) Soil analysis and soil health management	-do-		
	(6) Market-led extension	-do-		
	(7) Food diversification/ nutrition improvement/ gender mainstreaming	-do-		
	(1) Application of the Guideline and Check list	Engineer staffin DDA	time	24
	(2) Data preparation and record keeping of pre-condition of each sub-projects	-do-		
	(3) Design of Pumping machinery	-do-		
	(4) Collaboration with extension officers for O&M activities / gender mainstreaming	-do-		
	(5) Organization of design documents	-do-		

3.7.5.2 Strengthening of Research- Extension-Farmer Linkages and joint visits:

The Project will conduct workshops/Seminars for strengthening of researchers, extension officers and farmer linkage and conduct field trial to establish FPO-based extension system. Under this category of the work, establishment of FPO based-extension system as an experiment will be carried out.

Table 3.44: Implementation Procedure for Trial on FPO based Extension System

Procedure		Description	Executor	Supporter
STEP-1	Interview survey	Conduct interview survey of extension officers in DOA to collect accrual work load of the extension workers	PMC	-
STEP-2	Conduct workshop for preparation of trial plan	DOA and PMU staff will participate in the workshop. The PMC facilitate the discuss among the participants to decide the trial plan with clear milestones	PMC	-
STEP-3	Drafting new extension system regulation	New extension system regulation which specify the role of extension office and office bearer of FPO in agriculture extension. The drafted regulation will be discussed among PMU, DOA and other stakeholders in SAU. The regulation should estimate the reduction of the workload if new extension will be implemented.	DOA	PMU PMC
STEP-4	Nomination of candidate FPO, extension officers in DDA and BPMU	Nomination of candidate FPO, extension officers in DDA and BPMU for trial. The clear time line and responsibility and necessary action will be agreed in the written document.	DOA/PMU	PMC
STEP-5	1 st trial for new extension system	Conduct 1 crop season trial	DOA/PMU	PMC
STEP-6	Review meeting	Compile the result of trial and make necessary modification on the trial plan	DOA/PMU	PMC

STEP-7	2 nd trial for new extension system	Conduct 1 crop season trial	DOA/PMU	PMC
STEP-8	Review meeting	Compile the result of trial and make necessary modification on drafting new extension system regulation Maintain the FPO as a model case	DOA/PMU	PMC
STEP-9	Disseminate the experience	Though ICE activities the success model will be disseminate to all the site office in DOA	DOA	PMC

Table 3.45: Overseas Training, Exposure/Study visits of Project staff and other stakeholders

Main Topics		Destination	Participants	Number of Participants
JICA Initiative	<ul style="list-style-type: none"> SHEP approach Nutrition improvement 	Japan	<ul style="list-style-type: none"> Officers of PMU Officers of DOA 	8 to 10 each
Production and primary processing	<ul style="list-style-type: none"> Basic and advanced cultivation skills Post harvesting handling and processing skills Good Agricultural Practice (GAP) Irrigation management 	Selected from Japan, Netherlands, Israel, etc.	<ul style="list-style-type: none"> Extension officers of DPMU and BPMU Extension officers of DDA Progressive farmers 	8 to 10 each
Extension and agricultural marketing and value addition	<ul style="list-style-type: none"> Extension services of government and private sectors Agricultural cooperative system Value addition and market-in agriculture Empowerment of agricultural entrepreneur 	Selected from Japan, Netherlands, Israel, etc.	<ul style="list-style-type: none"> Officers of PMU Officers of DOA 	8 to 10 each

Table 3.46: Upgrading of infrastructure of State Agriculture Management and Extension Training Institute (SAMETI)

Particular	Description
Location of the Facility	Craignano Mashobra at a distance of 15 Kms. from Shimla
Outline of Building Tentative subject to change as per site and need by SPMU	<ul style="list-style-type: none"> Four stories building Flooring area of 800 m² Number of beds: 10 nos. With attached bathroom Area of room : 3.75 x 5.00 m = 18.75 m² per room Other facilities : Two kitchens with necessary equipment (5.83 x 7.00 m per kitchen) Two dining halls with two tables (5.83 x 5.00 m)
Management	Director of SAMETI will be responsible of the management One clerk, two care takers, one cook with two gate keepers and one peon will be employed by SAMETI and manage the facilities

3.7.6 Baseline Survey and Impact Assessment:

The Baseline Survey and Impact Assessment is part of the PDCA activities that are normally required to carry out a project.

Table 3.47: Outline of Baseline Survey and Impact Assessment

Survey	Contents	Remarks
Baseline survey	Household survey in approximately 30 sites (10% of 306 candidate Sub-project sites in the short list), samples in each site would depend upon the number of households in each sub project	<ul style="list-style-type: none"> Survey to be carried out by resource agency, supervised by District PMU at each site, under overall coordination of State PMU with technical and managerial support by project consultant for TOR preparation, selection of survey contractors, field execution, analysis & evaluation, report preparation, dissemination. Through the process of these activities, we will strengthen the capacity of PMU and DoA staff.
Mid-line survey	<ul style="list-style-type: none"> Household survey in 13 sites (10% of implemented sites), 20 samples in each site (260 samples) Community-based Impact Assessment (CBIA) for capturing indicators of change in 13 sites (10% of implemented sites) Baseline survey of pilot project sites of nutrition sensitive, gender mainstreaming, livelihood support, SHEP etc. (10% of each pilot activities). 	<ul style="list-style-type: none"> Survey to be carried out by resource agency, supervised by District PMU at each site, under overall coordination of State PMU. Through the process of these activities, we will strengthen the capacity of PMU and DoA staff.
End-line survey	Same sites where conducted Mid-line survey.	<ul style="list-style-type: none"> Survey to be carried out by resource agency, supervised by District PMU at each site, under overall coordination of State PMU. Through the process of these activities, we will strengthen the capacity of PMU and DoA staff.

3.7.7 Gender Mainstreaming:

Following activities are suggested to promote gender mainstreaming in the Project. It is expected through the six activities outlined under, the project will address the gender related issues associated with agriculture and will serve the purpose of it being a gender friendly agriculture project.

Table 3.48: Activities to promote gender mainstreaming

Sr. No	Name of Activity	Target	Contents	Remarks
1	Preparation of gender policy of the Project	PMU staff	3~4 pages policy paper Develop a gender policy with a gender action plan for the implementation of agriculture projects. This will not just serve for the current HPCDPP 2 implementation The policy may guide the following ideas	

Sr. No	Name of Activity	Target	Contents	Remarks
			<ul style="list-style-type: none"> • Appropriate gender balance in staff recruitment • All data collected must be gender • Set up the Internal complaints committee in the PMMU 	
2	Gender awareness training for empowerment of SHGs	SHGs (some groups will be selected)	<p>To enable firming up women's identity, self-confidence and personhood, that facilitates their decision making with improved negotiation and bargaining skills.</p> <ul style="list-style-type: none"> • Gender sensitisation (For SHGs/men and Youth) • Gender division of labour (for women, men and youth) • VAW with specific focus on DV (for SHGs – on increase in DV since the pandemic broke out) <p>The certain SHG will be selected in accordance with the following selection criteria.</p> <ul style="list-style-type: none"> • SHG should be active, fully involved in faring activities. • Should be willing to share cost of machinery for crop production/post-harvest and value addition. • Should be willing for credit linkage with financial institutions. • Should be willing to diversity to vegetables from the traditional crops. <p>The members of SHG should also be educated to read and write and willing to meet every month to discuss and finalize the group activities.</p>	
3	Livelihood Improvement Program under Farmers' Support Program	<p>SHGs (nearly 300) Direct beneficiaries will be 3,000 farmers</p> <ul style="list-style-type: none"> • Female-headed households and single women (widowed / separated / deserted/ unmarried) • Women / men under BPL category • Women / men with disability, but capable of doing in-house non-farm production • Marginalised and vulnerable women/ men (SC/STs and 	<ul style="list-style-type: none"> • Mushroom cultivation • Honeybee rearing • Dairying • Backyard poultry farming • Kitchen gardening • Shitake mushroom cultivation • Service sector training • Fish culture 	The target SHGs will be selected based on needs, vulnerability and present status of the activities (check amount of saving and credit and number of meeting conducted)

Sr. No	Name of Activity	Target	Contents	Remarks
		women in difficult circumstances) Landless women /men		
4	Capacity Development of Agriculture Extension Staff	PMU staff Extension officers in DoA	The following contents of training will be provided Understanding gender- concepts/ gender discrimination etc. Gender-division of labour Life-cycle of violence (context of the person since born to old age) Role of women in agriculture Disparities between men and women in agriculture Gender-friendly agriculture implements to ease women's burden Role of the extension officers and the extension department in supporting women farmers and poor farmers	All extension workers be imparted gender training and Gender perspective in agriculture training each year, followed by a combined refresher training. So, an annual training cycle is suggested.
5	Monitoring of gender perspective in the project implementation	PMU	At the time of mid-term evaluation of the project, the gender officer should be nominated and evaluate and assess the gender perspective in the project implementation.	

3.7.8 Sexual Harassment of Women at Workplace:

The **Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013** is a [legislative act](#) in [India](#) that seeks to protect women from [sexual harassment](#) at their place of work. It was passed by the [Lok Sabha](#) on 3 September 2012 and by the [Rajya Sabha](#) on 26 February 2013. The Bill got the assent of the President on 23 April 2013. The Act came into force from 9 December 2013. This statute superseded the [Vishaka Guidelines](#) for Prevention of Sexual Harassment (POSH) introduced by the Supreme Court (SC) of India.

- The Act defines sexual harassment at the work place and creates a mechanism for redressal of complaints. It also provides safeguards against false or malicious charges.
- The Act also covers concepts of 'quid pro quo harassment' and 'hostile work environment' as forms of sexual harassment if it occurs in connection with an act or behaviour of sexual harassment.
- The definition of "aggrieved woman", who will get protection under the Act is extremely wide to cover all women, irrespective of her age or employment status, whether in the organised or unorganised sectors, public or private and covers clients, customers and domestic workers as well.
- An employer has been defined as any person who is responsible for management, supervision and control of the workplace and includes persons who formulate and administer policies of such an organisation under Section 2(g).

- While the "workplace" in the Vishakha Guidelines is confined to the traditional office set-up where there is a clear employer-employee relationship, the Act goes much further to include organisations, department, office, branch unit etc. in the public and private sector, organized and unorganized, hospitals, nursing homes, educational institutions, sports institutes, stadiums, sports complex and any place visited by the employee during the course of employment including the transportation.
- Even non-traditional workplaces which involve tele-commuting will get covered under this law.
- The Committee is required to complete the inquiry within a time period of 90 days. On completion of the inquiry, the report will be sent to the employer or the District Officer, as the case may be, they are mandated to take action on the report within 60 days.
- Every employer is required to constitute an Internal Complaints Committee at each office or branch with 10 or more employees. The District Officer is required to constitute a Local Complaints Committee at each district and if required at the block level.
- The Complaints Committees have the powers of civil courts for gathering evidence.
- The Complaints Committees are required to provide for conciliation before initiating an inquiry, if requested by the complainant.
- The inquiry process under the Act should be confidential and the Act lays down a penalty of Rs 5000 on the person who has breached confidentiality.
- The Act requires employers to conduct education and sensitisation programmes and develop policies against sexual harassment, among other obligations. The objective of Awareness Building can be achieved through Banners and Poster displayed in the premises, eLearning courses for the employees, managers and Internal Committee members, Classroom training sessions, Communication of Organizational Sexual Harassment Policy through emails, e-Learning or Classroom Training. It is recommended that the eLearning or Classroom Training be delivered in the primary communication language of the employee.
- Every organization must file an Annual Report to the District Officer every calendar year as prescribed in the Rule 14 of the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Rules, 2013.
- Penalties have been prescribed for employers. Non-compliance with the provisions of the Act shall be punishable with a fine of up to Rs.50, 000. Repeated violations may lead to higher penalties and cancellation of licence or deregistration to conduct business.
- Government can order an officer to inspect workplace and records related to sexual harassment in any organisation.
- Under the Act, which also covers students in schools and colleges as well as patients in hospitals, employers and local authorities will have to set up grievance committees to investigate all complaints. Employers who fail to comply will be punished with a fine of up to 50,000 rupees.

Under Chapter II, Constitution of Internal Complaints Committee U/S 4. Constitution of Internal Complaints Committee.

- Every employer of a workplace shall, by an order in writing, constitute a Committee to be known as the “Internal Complaints Committee”: U/s 6 provided that where the offices or administrative units of the workplace are located at different places or divisional or sub-divisional level, the Internal Committee shall be constituted at all administrative units or offices.
- The Internal Committees shall consist of the following members to be nominated by the employer, namely: -
 - a) A Presiding Officer who shall be a woman employed at a senior level at workplace from amongst the employees. Provided that in case a senior level woman employee is not available, the Presiding Officer shall be nominated from other offices or administrative units of the workplace referred to in sub-section(1): Provided further that in case the other offices or administrative units of the workplace do not have a senior level woman employee, the Presiding Officer shall be nominated from any other workplace of the same employer or other department or organisation;
 - b) not less than two Members from amongst employees preferably committed to the cause of women or who have had experience in social work or have legal knowledge;
 - c) one member from amongst non-governmental organisations or associations committed to the cause of women or a person familiar with the issues relating to sexual harassment: Provided that at least one-half of the total Members so nominated shall be women.
- The Presiding Officer and every Member of the Internal Committee shall hold office for such period, not exceeding three years, from the date of their nomination as may be specified by the employer.
- The Member appointed from amongst the non-governmental organisations or associations shall be paid such fees or allowances for holding the proceedings of the Internal Committee, by the employer, as may be prescribed.
- Where the Presiding Officer or any Member of the Internal Committee, -
 - a) contravenes the provisions of section 16; or
 - b) has been convicted for an offence or an inquiry into an offence under any law for the time being in force is pending against him; or
 - c) he has been found guilty in any disciplinary proceedings or a disciplinary proceeding is pending against him; or
 - d) has so abused his position as to render his continuance in office prejudicial to the public interest, such Presiding Officer or Member, as the case may be, shall be removed from the Committee and the vacancy so created or any casual vacancy shall be filled by fresh nomination in accordance with the provisions of this section.

A Sexual harassment committee in every office of the project will be framed as per HP government instructions. Any sexual harassment complaint will be handed over to sexual harassment committee for inquiry and report facts accordingly

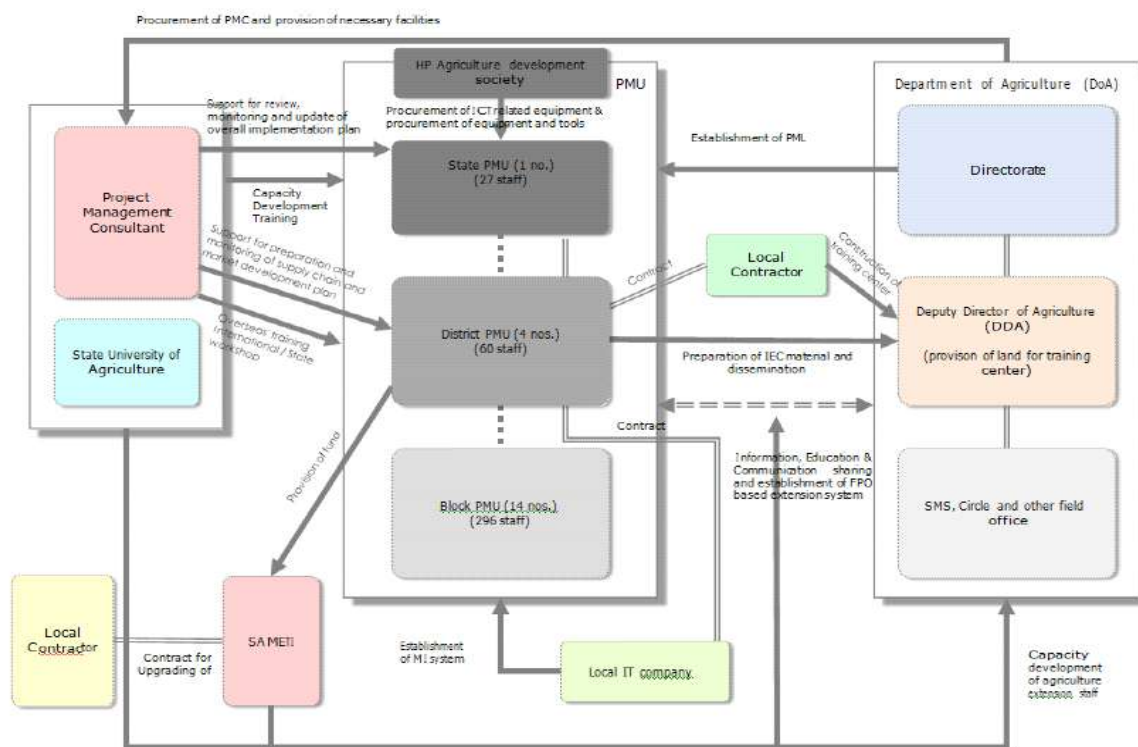


Figure 16: Implementation Framework for Component 4

3.8 Accountability:

The accountability of Project implementers may be divided into two types:

3.8.1 Administrative Accountability & Grievance Redressal Mechanism

Accountability of the officials (Govt. & Project) towards transparency in implementation

3.8.2 Social Accountability & Grievance Redressal Mechanism

Accountability of Community members participating in Project Implementation.

Administrative Accountability & Grievance Redress Mechanism

It can be carried out through response to a specific complaint of stakeholders through a range of informal and flexible methods and a compliance review to investigate alleged violations of operational policies and procedures of Project that have resulted, or are likely to result, in direct, adverse effect to stakeholders and to make recommendations to ensure project compliance, including recommendations, if appropriate, for any remedial changes in the scope or implementation of the project.

Procedural Steps and Time Frame:

The following are the procedural steps proposed:

Step 1: Filing of the Complaint: The affected party, or its representative, files a complaint with the SPMU. If a complaint is received by DPM/BPM, it will be forwarded to the PD, SPMU

Step 2: Registration and Acknowledgement of the Complaint: Upon receipt of the complaint, the SPMU will register it in the registry of complaints and will send an acknowledgement to the complainant. This step is mainly administrative. If the SPMU

immediately determines that the complaint cannot be accepted because it is not within Project's mandate, the complaint cannot be entertained and the complainant should be notified with a copy to the PD.

Step 3: Review and Assessment of the Complaint: If the complaint is accepted, the SPMU will undertake a review to determine how best to address the issues raised in it. The review will normally include site visits and discussions/meetings with the people the SPMU believes would be useful. The SPMU will obtain information, review relevant documents.

After the review is completed, the SPMU will make an assessment and determine what the real problems are; who the real parties to the problem are; what kind of remedies the complainant seeks to obtain; and how best a mechanism for the resolution of the problem can be worked out. The SPMU will complete the review and assessment and report his/her findings to the PD.

Step 4: Implementation of the Course of Action: -The SPMU will implement the course of action to address the complaint. Each course of action will be tailored to the individual complaint, depending on such factors as the type and seriousness of the problem, the principal parties to the problem, the remedies being sought by the complainant, the urgency required in fashioning appropriate mitigation measures. The SPMU will also forward the action taken details to the complainant.

Transparency and Information Dissemination:

The SPMU's operations at all stages will be as transparent as possible, subject to this paragraph and consistent with relevant JICA policies and procedures. General descriptions about the process can be made public, but substantive details about the discussions will be kept confidential until a final solution is reached. The SPMU and its staff will be subject to Project's confidentiality and disclosure of information policy, including those provisions aimed at ensuring that confidential information is not disclosed.

Any material or information submitted to the SPMU on a confidential basis from any party may not be released to any other parties without the consent of the party that submitted it.

Vigilance committee:

A vigilance committee will be constituted in the SPMU office to inquire into any complaint regarding procurement of store/construction work and constraints.

3.8.2 Social Accountability & Grievance Redress Mechanism:-

3.8.2.1 Public Disclosure of Information:-

The principle behind public disclosure is to enhance transparency and accountability to the beneficiary communities and to make them feel part of the project by sharing critical information with them. To achieve this, details of all approved Project activities and interventions indicating funding levels, contact persons will be displayed by the DPMU in the public information notice boards e.g. at the DPMU office, BPMU offices, KVA president's house or social halls. Details will include names of the project, activities approved and released funds and contact persons.

3.8.2.2 Community Meetings:

Monthly community meetings shall be convened by BPM with KVA, NGOs and other Project officials. Community members will have an opportunity to ask questions, seek clarification and give suggestions on the implementation during these meetings. Proceedings of the meetings will be submitted to the DPMU by the BPMU for incorporation in their quarterly reports.

3.8.3 Grievance Redressal Mechanism (GRM): –

A GRM is a strategy developed to mitigate social risks in the implementation of the Project. A Grievance Redressal Mechanism for the Project shall be established where it does not exist or strengthened/refined/adapted to the Project where it exists locally, whether these mechanisms are formal or informal. Project Affected Persons (PAP) and other parties will submit complaints regarding the Project, through the established GRM, or existing appropriate local grievance mechanisms. The GRM will ensure that complaints received are promptly reviewed in order to address project-related concerns.

The community-based grievance resolution structures i.e. the Social Accountability and Integrity Committee (SAIC) should be formed within the KVA as subcommittee to resolve grievances or disputes received and logged and ensure that redress actions are implemented by responsible parties. If the aggrieved Project Affected Persons (PAPs) or communities are not satisfied with the redress action at this level, they will have an opportunity for redressal at the DPMU level through the BPMU and if this also fails, it should be sent to the SPMU.

3.8.3.1 Dispute Resolution Mechanisms:

For complaints involving community members, beneficiaries will be encouraged to report and resolve issues at community level through the KVAs, during their monthly meetings using their constitution. Members may also apply their dispute resolution mechanisms as appropriate. If the nature of the complaint/grievance is such that it cannot be reported or resolved at community level, beneficiaries will be sensitized during community mobilization and other capacity building opportunities on how to send it upwards through the project institutional structure from KVA to SPMU. If even after exhausting the project institutional structure, beneficiaries are still dissatisfied with explanations and solutions offered, they will have the option of seeking justice through the court of law.

The efficacy of the complaint handling procedures will be monitored and assessed during the annual review workshops for modifications if required. All complaints will be categorized, logged in a register to be maintained at all levels, collated and followed up. Complaints and their follow up will be recorded, analyzed and reported in quarterly and annual project reports. The M&E Officer at SPMU level will monitor and report on the efficacy of the complaints handling mechanisms.

3.9 Project Hand-Over:

On completion of the sub-projects (Community Infrastructure at Village Level) under HPCDP-II within the jurisdiction area of each KVA, a Project Completion Report (PCR) shall be issued by the BPMU in the form set out in Annexure- XVI and the facilities created shall be handed over to the KVA concerned in accordance with the objectives and guidelines of HPCDP-II and an undertaking shall be taken from the KVA for operation& maintenance of the facilities at its cost.

3.10 Hand-holding:

Handholding in the form of training, capacity building support, technical support etc. will be provided by the PMU to the KVAs and the community for initial 2 years after handing over the scheme to the KVAs. In this regard, a provision upto **a maximum of 3% of the total estimated cost of the project/scheme** will be made and the financial limit for such support shall be decided by the Executive Committee.

3.11 Project Schedule:

As stated earlier, the Project will be completed in eight years from April 2021 to December 2029. The shortlisted 306 sub-projects will be implemented in a gradually phased manner with intensive support from PMC.

4. PROCUREMENT

4.1 Types of Procurement

Procurement by the PMUs for HPCDP-II can be classified into- (a) construction works, (b) supply of materials or goods, which also include durable items like office furniture, IT Equipment's, Survey & Design Equipment's and consumables such as stationeries, etc., and (c) hiring of services, including consultancy. The four principles of "Guidelines for Procurement under JICA ODA Loan" dated March 2009 economy, efficiency, non-discrimination among eligible bidders and transparency shall be abide by while making procurement of any kind.

4.2 Pre-Procurement Activities

4.2.1 Specification

Prior to procuring construction works or goods or services, specifications, plan, drawing, design, special requirement or other description pertaining thereto shall be prepared by the PMU. The description referred to shall be based on international standards, where such exist; otherwise, on national technical regulations, recognized national standards or codes.

The technical specifications shall be prepared on the basis of relevant objectives, technical and quality characteristics, and wherever appropriate, in terms of performance rather than design or descriptive characteristics. In preparing the description, unless there exists any other way of mentioning clearly in an intelligible manner the characteristics of the construction works or goods or services, a particular brand, trademark, name, patent, design, type, origin or producer's name shall not be mentioned. If there is no other way than such mentioning, a particular brand, trademark, name, patent, design, type, origin or producer's name shall be mentioned subject to the approval of the Technical Committee to be formed by the Project Director.

The PMU shall prepare description of procurement requirements in conformity with applicable environmental protection legislation. For the purpose of opening tenders or proposals and evaluation of bids the PMU shall constitute a tender committee comprising a minimum of three members.

4.3 Procurement Method

Procurement of construction works or goods or services can be made either through (a) International Competitive Bidding (ICB) or (b) Local Competitive Bidding (LCB)

International Competitive Bidding shall be for contracts above **Rs. 15 Crores** and shall be in accordance with the provision of Section "**Procurement Package and Methods**" of Attachment -9 "**Principles of Procurement**" of the MOD

The item-wise procurement methods under the HPCDP are given in **Annexure -XVII**.

4.3.1 ICB Rules:-

4.3.1.1 Section 1.08 Language

All documents relating to the procurement, including the contract, shall be prepared in one of the following languages, selected by the Borrower: Japanese, English, French or Spanish. Although the Borrower may issue translated versions of these documents in the national language of the Borrower's country for the Borrower's reference, the Japanese, English, French or Spanish documents shall take precedence.

4.3.1.1.1 Points of Attention for Executing Agencies:

Due attention should be paid to the fact that all documents for the international procurement under Japanese ODA Loans shall be prepared in English from the view point of international standards and non-discrimination principle.

- a. JICA's Procurement Guidelines allow EA to prepare procurement documents in the Borrowing Country's language for the Borrower's reference, and Para No. 54 Article 101 requests EA to prepare in both English and local language.
- b. Although EA may issue translated versions of documents in the local language for the Borrower's reference, the English documents shall take precedence, based on the stipulations of JICA's Procurement Guidelines.
- c. It is time and cost consuming to put the local language in documents. Therefore, it should not be mandatory to put the local language in such documents.

4.3.1.2 Section 3.01 Advertising:

In all cases of ICB contract, invitations to pre-qualification or to bidding shall be advertised in at least one newspaper of general circulation in the Borrower's country. The Borrower should also promptly send copies of such invitations (or the advertisement therefor) to JICA.

4.3.1.2.1 Points of Attention to for Executing Agencies:

1. It should be noted that advertisement in at least one newspaper of general circulation in borrower's country is necessary for the announcement of pre-qualification and/or bidding under ICB packages.
2. The advertisement may be published by an electronic system, in addition to that in a newspaper.

4.3.1.3 Section 3.02 Pre-qualification of Bidders:

1. Pre-qualification is in principle required in advance of bidding for large or complex works and, exceptionally, for custom-designed equipment and specialized services to ensure that invitations to bid are extended only to those who are technically and financially capable.
2. Pre-qualification shall be based entirely upon the capability of prospective bidders to perform the particular contract satisfactorily, taking into account, inter alia, their:
 - a. experience of and past performance on similar contracts
 - b. capabilities of construction or production capacity of plants, and
 - c. Financial position. A clear scope of the contract and the requirements for qualification (criteria) shall be specified in the pre-qualification documents.All bidders meeting the criteria specified shall be allowed to bid.

4.3.1.3.1 Points of Attention for Executing Agencies:

EA should pay full attention to the principle of non-discrimination. It is not acceptable to set a limit on the number of successful applicants prior to the evaluation of pre-qualification. All applicants meeting the criteria shall be allowed to bid. Regarding the minimum number of pre-qualified bidders, if more than or equal to two firms are qualified as a result of pre-qualification, the tender should be continued.

4.3.1.4 Section 4.01 General

The bidding documents shall provide all information necessary to enable a prospective bidder to prepare a bid for the goods and services to be provided. While the details and complexity of these documents will vary with the size and nature of the proposed bid package and contract, they generally include: invitation to bid; instructions to bidders; form of bid; form of contract; conditions of contract (both general and special); technical specifications; list of goods or bill of quantities and drawings, as well as necessary appendices, detailing, for example, the type(s) of security required or acceptable. Guidelines on the principal components of the bidding documents are given in the following Sections.

Borrowers shall use the appropriate Standard Bidding Documents (SBDs) of the latest version issued by JICA with minimum changes acceptable to JICA, as necessary to address project-specific conditions. Any such changes shall be introduced only through bid data sheets, or through special conditions of contract, and not by introducing changes in the standard wording of JICA's SBDs. When no relevant SBDs have been issued, the Borrower shall use other internationally recognized standard conditions of contract and contract forms acceptable to JICA.

If a fee is charged for the bidding documents, it shall be reasonable and reflect the cost of their production and shall not be so high as to discourage qualified bidders.

4.3.1.4.1 Points of Attention for Executing Agencies

1. JICA has developed seven (7) types of Standard Bidding Documents (SBDs). Borrowers shall use the latest version of the appropriate SBDs issued by JICA with minimum changes acceptable to JICA. Usually, the type of SBDs for each package would be discussed and agreed at the time of appraisal. The result should be clearly stipulated in the Minutes of Discussion (M/D) between the EA and JICA.
2. In a large project, Japanese ODA loans are sometimes provided by phases. In such a case the first loan is insufficient to cover the total project budget. The contract of the project under the first loan can be signed in anticipation of the succeeding loans.
3. If budget is not available or not sufficiently available for the procurement of goods/services, such procurement may be cancelled. In such a case, JICA and the EA concerned will work in close consultation to find a solution. Attention should be paid that the cancellation of the tendering shall be subject to concurrence of JICA.
4. Any procedure under which bids above or below a predetermined value, such as Owner's Estimate (OE), are automatically disqualified is not permitted. Therefore, EA shall not put such a ceiling amount for the bid price in order to disqualify the bidders. In a case where the lowest evaluated bid price exceeds the cost estimates by a substantial amount (the price expected here may not be an unreasonably low price, determined unilaterally by the Borrower, but should be a price reasonably agreed upon with JICA such as the price obtained from the calculation of the loan amount, result of detailed design, or other proper measures for estimation), EA may reject all bids only after consultation with JICA and obtaining its concurrence. In addition, if all bids need to be rejected, EA should review factors that made such rejections necessary and consider rectifying the situation by revising the specifications, and/or modifying the project design (or the amounts of work or items in the original invitation to bid) before inviting new bids.
5. To emphasize free competition among bidders, JICA does not accept the idea of disclosing the estimated price for the contract before the bidding as stipulated in 7 of

Section 1.01 of JICA's Procurement Guidelines.

6. EA can proceed to the evaluation of the bid even if less than three bidders have submitted the bids. This is because at the moment of submission, the bidders do not know the number of bidders who submitted the bids. It is thus considered that competition has taken place (see 1. Paragraph (1) (03) of later Section 5.10 of JICA's Procurement Guidelines).

4.3.1.5 Section 4.03 Bid Securities:

Bid bonds or guarantees will usually be required, but they shall not be set so high as to discourage suitable bidders. Bid bonds or guarantees shall be released to unsuccessful bidders as soon as possible after the contract has been signed with the successful bidder.

4.3.1.5.1 Points of Attention for Executing Agencies:

"The limitation of guarantor banks to those in the Borrower's country, regardless of the fact that the country has very few foreign bank branches, or the addition of provisions to make the repatriation of funds only in the currency of the Borrower's country is not acceptable".

4.3.1.6 Section 4.06 Standards:

If specific national or other standards with which equipment or materials must comply are cited, the bidding documents shall state that equipment or materials meeting the Japan Industrial Standards or other internationally accepted standards which ensure quality equivalent to or higher than the standards specified will also be accepted.

4.3.1.6.1 Points of Attention for Executing Agencies:

Specifications shall be clear and precise to avoid confusion among bidders and various problems in the evaluation stage. In the context of ICB, the specification must be drafted to permit the widest possible competition.

4.3.1.7 Section 4.12 Price Adjustment Clauses:

1. Bidding documents shall state clearly whether firm prices are required or adjustment of bid prices is acceptable. In appropriate cases, provision will be made for adjustment (upwards or downwards) of the contract price, should changes occur in the prices of major cost components of the contract, such as labor or important materials.
2. If the price is adjustable, the adjustment shall be carried out according to the adjustment formula or formulae indicated in the bidding documents.

4.3.1.7.1 Points of Attention for Executing Agencies:

There are many past cases where the contract was amended. There are two main reasons for such amendments: the increase in the cost by inflation and an unforeseeable condition. In order to be prepared for the increase in the cost by inflation, the contract should incorporate price adjustment clauses.

If the original contract price which was concurred by JICA would not be enough, EA should consider the amendment of the contract promptly in accordance with the relevant stipulation of the L/A including the availability of additional financial resources, if necessary.

4.3.1.8 Section 4.13 Advance Payment:

1. The percentage of the total payment to be made in advance, upon entry into effect of the contract, for mobilization and similar expenses shall be reasonable and specified in the

bidding documents.

2. The bidding documents shall specify the arrangements for any security required for advance payments.

4.3.1.8.1 Points of Attention for Executing Agencies:

Due attention should be paid to the above Note “The percentage can usually be expected to lie between 10 and 15% of the contract price, with the exception of small-sized or special contracts for ships, etc.”

4.3.1.9 Section 4.14 Performance Securities and Retention Money:

1. Bidding documents for works shall require a security in an amount sufficient to protect the Borrower in case of breach of contract by the Contractor. This security can be either a bank guarantee or a performance bond, the amount of which will vary with the type and size of the work, but shall be sufficient to protect the Borrower in the case of default by the Contractor. A portion of this security shall extend sufficiently beyond the date of completion of the works to cover the defects liability or maintenance period up to final acceptance by the Borrower. For such portion of the security extended beyond the date of completion of the works, contracts may provide for a percentage of each interim payment to be held as retention money until final acceptance. The amount of the security required shall be stated in the bidding documents.
2. In contracts for the supply of goods, the need for performance security depends on the market conditions and commercial practice for the particular kind of goods. Contractors may be required to provide a guarantee to protect the Borrower against non-performance of the contract. Such security in an appropriate amount may also cover warranty obligations. Alternatively, a percentage of the payments may be held as retention money to cover warranty obligations, and any installations or commissioning requirements. The security or retention money shall be of a reasonable amount.

4.3.1.9.1 Points of Attention for Executing Agencies:

1. Due attention should be paid to Note 1 “However, the amount (which may vary greatly, depending on the case, and is between 5 and 15% of the contract price) and the validity period (the validity period is normally about one year after completion of the work) should be reasonable in the light of international business practice.”
2. Due attention should be paid to Note 3 “In the case of a bank guarantee, the limitation of guarantor banks to those in the Borrower’s country, or the addition of provisions to make the repatriation of funds only in the currency of the Borrower’s country is not acceptable”.

4.3.1.10 Section 4.19 Applicable Laws:

The contract shall stipulate which laws shall govern its interpretation and performance.

4.3.1.10.1 Points of Attention to for Executing Agencies:

EAs are requested to pay full attention to the Note of this Section “In addition to applicable laws, the contents of the Exchange of Notes and the provisions of the Loan Agreement will be taken into consideration in execution of the project by the Borrower.”

4.3.1.11 Section 5.06 Evaluation of Comparison of Bids:

1. The purpose of bid evaluation is to compare bids which conform to the technical specifications and are responsive to the bidding documents on the basis of their evaluated cost. Among the bids which conform to the technical specifications, the bid with the lowest evaluated cost, not necessarily the lowest submitted price shall be selected for award. Even when there has been pre-qualification of bidders, technical factors shall be given their full importance when evaluating bids.

Bid evaluation shall be consistent with the terms and conditions set forth in the bidding documents.

- a. The bidding documents shall specify provisions for adjustment of a bid price to correct any errors in computation, the relevant factors to be considered in bid evaluation and the manner in which they will be applied for the purpose of determining the lowest evaluated bid.
- b. Factors other than price which may be taken into consideration include, inter alia, the payment schedule, the time of completion of construction or delivery, the operating costs, the efficiency and compatibility of the equipment, consumption (energy) efficiency, the availability of service and spare parts, the reliability of the quality control methods (including construction methods) proposed, safety, environmental benefits, and minor deviations, if any. To the extent practicable, these factors other than price shall be expressed in monetary terms according to criteria specified in the bidding documents.
- c. Provisions for price adjustment included in a bid shall not be taken into consideration.

For the purposes of evaluation and comparison of bids for the supply of goods to be procured on the basis of international bidding:

- a. Bidders will be required to state in their bids the CIP (Carried and Insurance Paid) price for imported goods or the EXW (ex-works, ex-factory, or off-shelf) price plus cost of inland transportation and insurance to the place of destination for other goods offered in the bid;
- b. Customs duties and other import taxes levied in connection with the importation or sales and similar taxes levied in connection with the sale or delivery of goods pursuant to a bid shall not be taken into account in the evaluation of that bid; and
- c. The cost of inland freight and other expenditures incidental to the transportation and delivery of the goods to the place of their use or installation for the purposes of the project shall be included, if it is specified in the bidding documents.
- d. Where Contractors are responsible for all duties, taxes and other levies under civil works contracts, bidders shall take these factors into account in preparing their bids. The evaluation and comparison of bids shall be on this basis.
- e. Any procedure under which bids above or below a predetermined value are automatically disqualified is not permitted.

4.3.1.11.1 Points of Attention for Executing Agencies:

1. Regarding the Merit Point System, due attention should be paid to Note 5 “Under Japanese ODA Loans, the use of the Merit Point System, according to which price and technical factors are given relative weights, and the bid that obtains the highest point total

is selected, is not accepted in principle. Evaluation using Merit Point System tends to be subjective since no objective or impartial rule has been established for the allocation of weights to price and technical factors. These Guidelines require the Borrowers to set clear technical specifications and to compare bids which conform to the technical specifications on the basis of their evaluated cost. The Merit Point System does not conform to this requirement.”.

2. Any procedure under which bids above or below a predetermined value, such as Owner’s Estimate (OE), is automatically disqualified and is not permitted. Therefore, EA shall not put such a ceiling amount for the bid price in order to disqualify the bidders. In a case where the lowest evaluated bid price exceeds the cost estimates by a substantial amount (the price expected here may not be an unreasonably low price, determined unilaterally by the Borrower, but should be a price reasonably agreed upon with JICA such as the price obtained from the calculation of the loan amount, result of detailed design, or other proper measures for estimation), EA may reject all bids only after consultation with JICA and obtaining its concurrence. In addition, if all bids need to be rejected, EA should review factors that made such rejections necessary and consider rectifying the situation by revising the specifications, and/or modifying the project design (or the amounts of work or items in the original invitation to bid) before inviting new bids.
3. To emphasize free competition among bidders, JICA does not accept the idea of disclosing the estimated price for the contract before the bidding as mentioned in 7 of previous Section 1.01 of JICA’s Procurement Guidelines.

4.3.1.11.2 Section 5.10 Rejection of Bids:

1. Bidding documents usually provide that the Borrower may reject all bids. Rejection of all bids may be justified when
 - a. the lowest evaluated bid exceeds the cost estimates by a substantial amount,
 - b. no bid is substantially responsive to the bidding documents or
 - c. There is a lack of competition. However, all bids shall not be rejected solely for the purpose of obtaining lower prices in the new bids to be invited on the same specifications.
2. If all bids are rejected, the Borrower shall review factors that made such rejection necessary and consider either revision of the specifications or modification of the project (or the amounts of work or items in the original invitation to bid), or both, before inviting new bids.
3. Where exceptional circumstances justify it, the Borrower may, as an alternative to rebidding, negotiate with the lowest evaluated bidder (or, failing a satisfactory result of such negotiation, with the next-lowest evaluated bidder) to try to obtain a satisfactory contract.

4.3.1.11.3 Points of Attention for Executing Agencies

As stipulated in JICA’s Procurement Guidelines Section 5.06, any procedure under which bids above or below a predetermined value, such as Owner’s Estimate (OE) are automatically disqualified is not permitted. Therefore, EA shall not put such ceiling amount for the bid price in order to disqualify the bidders. In a case where the lowest evaluated bid price exceeds the cost estimates (such as cost estimates agreed between EA and JICA) by a substantial amount, EA may reject all bids only after consultation with JICA and obtaining its concurrence. In addition, if all

bids need to be rejected, EA should review factors that made such rejection necessary and consider rectifying the situation by revising the specifications and/or modifying the project design (or the amounts of work or items in the original invitation to bid) before inviting new bids.

4.4 Procedures Other Than International Competitive Bidding (ICB) [Section 1.03]

1. There may be special circumstances in which ICB may not be appropriate, and JICA may consider alternative procedures acceptable in cases of the following:
 - a. Where the Borrower wishes to maintain reasonable standardization of its equipment or spare parts in the interests of compatibility with existing equipment.
 - b. Where the Borrower wishes to maintain continuity of services related to goods and services provided under an existing contract awarded in accordance with procedures acceptable to JICA.
 - c. Where the number of qualified contractors, suppliers or manufacturers (hereinafter collectively referred to as “Contractor(s)”) is limited.
 - d. Where the amount involved in the procurement is so small that foreign firms clearly would not be interested, or that the advantages of ICB would be outweighed by the administrative burden involved.
 - e. Where, in addition to cases (a), (b), (c) and (d) above, JICA deems it inappropriate to follow ICB procedures, e.g. in the case of emergency procurement.
2. In the above-mentioned cases the following procurement methods, may, as appropriate, be applied in such a manner as to comply with the ICB procedures to the fullest possible extent:
 - a. Limited International Bidding (LIB), which is essentially international competitive bidding by direct invitation without open advertisement.
 - b. International Shopping, which is a procurement method based on comparing price quotations obtained from several (usually at least three) foreign and/or local suppliers to ensure competitive prices.
 - c. Direct Contracting.
3. These Guidelines will not apply in the case of procurement of goods and services which are, by nature or scope, unlikely to attract foreign firms and, thus, to be domestically procured. Procurement of such goods and services shall, however, be effected with due attention to the considerations stated in Section 1.01 (3). JICA deems it appropriate that such procurement be effected through Local Competitive Bidding (LCB) in accordance with the procurement procedures generally used in the Borrower’s country.

4.4.1 Points of Attention for Executing Agencies:

Usually, the method of procurement for each package (ICB or LCB) will be discussed and agreed at the time of appraisal, depending on the nature of each package. The resultant decision shall be clearly stated in the Minutes of Discussion (M/D) between the EA and JICA.

The Executing Agency in this case shall follow HPFR, 2009 of Govt. of Himachal Pradesh

4.5 Local (or National) Competitive Bidding Process

Local (or National) competitive bidding shall be for contracts up to **Rs. 15 Crores**, and for which international bidding is not required in accordance with the agreement with JICA. While

procuring under local competitive bidding process, the PMUs shall procure by applying any of the following methods mentioned in the HPFR, 2009 as appropriate:

For procurement of construction works, goods, or other services by inviting:

- **Purchase of goods directly under rate contract. –**

Procurement of items under rate contract approved by H.P. Controller of Stores should be made on the basis of such rate contract. The goods which are not available in rate contract shall be procured through GeM portal. In case procurement made on rate contracted goods from suppliers, decided by the Controller of Stores, Govt. of H.P., the prices to be paid for such goods shall not exceed those stipulated in the rate contract and the other salient terms & conditions of the purchase shall be in line with those specified in the rate contract. The Head of PMUs shall make their own arrangement for inspection and testing of such goods where even required.

Head of PMUs shall follow those rates of contracts uploaded by the Controller of Stores, Govt. of H.P on their website.

- **Purchase of Goods/Services through GeM Portal (Refer-Notification of Finance Dept. Govt. of H.P: No. Fin (C) A (3) 5/2004 dated 24th Oct, 2017)**

The Head of PMUs should procure goods from GeM portal for which there is no rate of contract of Controller of Stores, Govt. of H.P. The Head of PMUs should follow the general terms and conditions issued by Govt. of India for procurement from GeM Portal. The authority need to establish the reasonability of rates for such procurement through the purchase committee for this purpose. The GeM Portal shall be utilized for direct online purchase as under-

- ✓ **Up to Rs. 25,000/-** through any of the available suppliers on the GeM meeting the requisite quality, specification and delivery period.
- ✓ **Above Rs.25,000/- and up to Rs.5,00,000/-** through the GeM seller having lowest price among the available sellers, of at least three different manufactures on GeM, meeting the requisite quality, specification and delivery period. Tools for online bidding and online reverse auction can be used if decided by the authority.
- ✓ **Above Rs. 5,00,000/-** by initiating bid on GeM Portal and selecting lowest bidder having lowest price meeting the requisite quality, specification and delivery period after mandatorily obtaining bids from minimum three bidders. The buyer can also use various tools available for online bidding or reverse auction, on GeM Portal.
- ✓ The invitation for online e-bidding/reverse auction will be available to all the exiting sellers or the other sellers registered on the portal and who have offered their good/services under the particular product/service category as per terms and conditions of Gem.
- ✓ The above mentioned monetary sealing is only applicable to purchases made through GeM.
- ✓ The Head of PMUs shall workout their procurement requirement and project their Annual Procurement Plan on GeM Portal within 30 days of budget approval.
- ✓ The Head of PMUs shall ascertain the reasonableness of prices before placement of order using Business Analytical Tool (BA) available on GeM including last

purchase price on GeM and their last purchase price.

- ✓ A demand for goods shall not be divided into small quantities to make piece meal purchases to avoid procurement through L-1 Buying/Bidding/Reverse Auction on GeM or the necessity of obtaining the sanction of the Competent Authority required with reference to the estimated value of the total demand.

For outsourcing of services if such required services are available on GeM the provision and procurement as prescribed under Rule 19 (I) may be followed. Otherwise the detailed procedures and instructions for this purpose shall be as Part-B of Chapter-6 of HPFR, 2009.

- **Purchase of goods without quotation – Rule 97 HPFR 2009**

- ✓ Purchase of goods up to monetary value not exceeding Rs. 3,000 (Rupees Three Thousand) only on each occasion subject to a maximum of Rs.50,000 (Rupees Fifty Thousand) in a Financial Year, may be made by Head of PMUs without inviting quotations or bids, on the basis of a certificate to be recorded by the authorized officer in the following format:-

“I, _____, am personally satisfied that the goods purchased are of the requisite quality and specifications and have been purchased from a reliable supplier at a reasonable price.”

- ✓ The concerned procuring officer shall keep a record of goods purchased without inviting quotations and on each such occasion, shall work out the cumulative total of such purchases made during the Financial Year.

- **Purchase of goods by the Purchase Committee- Rule 98 of HPFR-2009**

Purchase of goods costing above Rs. 3,000 (Rupees Three Thousand) only and up to Rs.1,00,000 (Rupees One Lakh) only on each occasion may be made on the recommendations of a duly constituted Local Purchase Committee consisting of three members of an appropriate level as may be decided by Head of PMUs. The said committee shall survey the market to ascertain the reasonableness of rate, quality and specifications and identify the appropriate supplier. Before recommending placement of the purchase order, the members of the committee shall jointly record a certificate as under.

“Certified that we, the following members of the purchase committee are jointly and individually satisfied that the goods recommended for purchase are of the requisite specification and quality, priced at the prevailing market rate and the supplier recommended is reliable and competent to supply the goods in question”.

- **Purchase of goods by obtaining bids. –**

The Goods/Services which are not available in GeM Portal shall be procure by adopting following standard method of obtaining bids:-

- (a) Limited Tender System
- (b) Advertised Tender System;
- (c) Single Tender System.

4.5.1 Limited Tender System-

1. Limited Tender System shall be adopted when estimated value of the goods to be procured is upto ***Rs. 10 Lakhs (Rupees Ten Lakhs) However, as per Govt. instruction***

procurement beyond Rs. 5 Lakh is to be affected through e-tender only or such limit as may be prescribed. Preference shall be given to the supplier having depot or dumps within the territory of Himachal Pradesh. Copies of the tender documents shall be sent directly by speed post or registered post or courier or e-mail to the firms dealing in required goods to obtain more responsive bids on competitive basis. The number of firms in Limited Tender System shall not be less than three.

2. Purchase through Limited Tender System may be adopted even where the estimated value of the procurement is more than the limit specified under sub-rule (1), in the following circumstances, if,
 - (a) The Head of PMUs certifies that the demand is urgent and procuring of goods through limited tender system is justified in view of urgency, indicating therein reasons why the procurement could not be anticipated for resorting to advertisement tender system;
 - (b) There are sufficient reasons to be recorded in writing by the Head of PMUs that it shall not be in the public interest to procure the goods through advertised tender enquiry; and
 - (c) The sources of supply are definitely known and possibility of fresh source(s) beyond those being resorted to, is remote.

4.5.2 Advertised Tender System –

1. Subject to exceptions under these rules, this method shall be used for procurement of goods of estimated value of **Rs. 10 Lakhs (Rupees Ten lakhs) and above or such limit as may be prescribed. However, as per Govt. instruction procurement beyond Rs. 5 Lakh is to be affected through e-tender only.** Advertisement in such cases shall be published in the least two leading daily newspapers having wide circulation.
2. The Head of PMUs shall also publish all its advertised tender enquiries on the web site of HPCDP-II and provide a link with web site of the Controller of Stores. It shall also give its web site address in the advertisements in the Official Gazette of Himachal Pradesh and newspapers as mentioned in sub-rule (1).
3. The Head of PMUs shall also post the complete tender documents in the web site of HPCDP-II and permit prospective bidders to make use of the documents downloaded from the web site. Specific mention shall be made in the tender documents for comprehensive maintenance contract where ever required. If such downloaded tender documents are priced, there shall be clear instructions for the bidder to pay the amount along with the bid.
4. The minimum time to be allowed for submission of bids shall be three weeks from the date of publication of the tender notice or availability of the tender documents for sale, whichever is later. Where the Heads of PMUs contemplates obtaining bids from abroad, the minimum period shall be four weeks for both domestic and foreign bidders. However, in case of urgency and in public interest the minimum period can be reduced to 2 weeks for submission of bids.
5. Highly valuable plant and machinery of a complex and technical nature, bids shall be procured in the following manner, namely:-
 - (a) technical bid consisting of all technical details along with commercial terms and conditions and financial bid indicating item-wise prices for the items mentioned in the technical bid shall be submitted separately by the bidders;

- (b) the technical bid and the financial bid shall be sealed by the bidder in separate covers duly super-scribed. Both these sealed covers shall be put in a bigger cover which shall also be sealed and duly super-scribed. The technical bids shall be opened by the Heads of PMUs at the first instance and evaluated by a committee constituted by The Head of PMUs; and
 - (c) at the second stage financial bids only of the technically acceptable offers, shall be opened for further evaluation and ranking before awarding the contract.
6. All the terms, conditions, stipulations and information to be incorporated in the tender documents shall contain instructions to bidders, conditions of contract, schedule of requirements, specifications and allied technical details, price schedule (to be utilized by the bidders for quoting their prices), contract form and other standard forms, if any, to be utilized by the Heads of PMUs and the bidders.
 7. The bids received after the date and time specified for their receipt shall not be considered.

4.5.3 Single Tender System –

1. Single Tender System shall be adopted in case of articles of proprietary nature, which are available from single source.
2. Articles of proprietary nature shall be purchased, after obtaining a certificate from the manufacturers or sole agents, as the case may be, to the effect that the rates quoted by them are identical to those approved by the Director General of Supplies and Disposals and / or Comptroller of Stores, Himachal Pradesh or the rates quoted by them are similar to those quoted in any other state in the country.
3. Single Tender System shall also be resorted to for additional purchase of goods from the original suppliers, which are intended either as part replacement of existing goods, services or installations or the extension of existing goods, services or installations, where such additional purchase of equipments and services shall meet the requirements of Heads of PMUs for utilizing the already existing equipments or services.

Note: A certificate in the following form shall be provided by the Heads of PMUs before procuring the goods from a single source:

- (a) The indented goods are manufactured by M/s.....
- (b) No other make or model is acceptable for the following reasons:
.....
- (c) Approval of Competent Authority has been obtained vide

(Signature with date and designation of the procuring officer)

Maintenance Contract –

Depending on the cost and nature of the goods to be purchased, the Head of PMUs may enter into maintenance contract (s) of suitable period either with the supplier of the goods or with any other firm. Such maintenance contracts are especially needed for sophisticated goods such as costly equipment and machinery(ies). It shall be mandatory that the equipment or machinery is maintained free of charge by the supplier during its warranty period as per terms of the contract.

Earnest Money–

1. In the case of advertised or limited tender system, Earnest Money shall be obtained from the tenderer (s), who shall furnish the same alongwith the tenders in the shape of Accounts

Payees Bank Draft/Banker's Cheque or duly pledged Fixed Deposit Receipts or deposit the amount in the client's bank account enclosing relevant record. Amount of Earnest Money shall be as per slab notified by H.P. Govt. *w.r.t.* the estimated value of goods to be procured as determined by the Procuring Department and indicated in the tender documents. The Earnest Money of unsuccessful tenderer (s) shall be refunded to them at the earliest after the expiry of final validity period of the tender as stipulated in the tender documents and the Earnest Money of successful tenderer shall remain in the custody of Procuring Department till the entire supply of goods has been made by the contractor to the best of satisfaction of Procuring Department; provided that the Procuring Department may retain the Earnest Money of the contractor supplying goods till further period depending upon the nature of contract.

2. The Earnest Money deposited by the tenderer (s) shall be forfeited in the following events, namely:-
 - (a) a modification or withdrawal of tender after the deadline for submission of tenders and during the validity period;
 - (b) refusal by the tenderer to accept an arithmetical error or otherwise appearing on the face of tender;
 - (c) failure on the part of the successful tenderer to sign the contract in accordance with the terms and conditions stipulated in the tender documents;
 - (d) failure on the part of the successful tenderer to provide performance security for the execution of the contract; and
 - (e) Failure on the part of the successful tenderer to execute the contract as per terms and conditions stipulated in the tender documents.

Performance Security –

1. Performance Security shall be obtained from the successful contractor on the award of the contract irrespective of his registration status, which shall be as per slab notified by H.P. Govt. *w.r.t.* the estimated value of goods to be procured as determined by the Procuring Department and indicated in the tender documents. Such security shall be furnished in the form of Fixed Deposit Receipt or Bank Guarantee from a commercial bank, as the case may be, in an acceptable form with a view to safeguard the interest of Procuring Department.
2. Performance Security shall remain valid for a period of sixty days from the date of completion of contract including warranty and guarantee period to the best of satisfaction of Procuring Department.

Advance or On Account payment to supplier –

1. Payment for services rendered or supplies made shall be released only after the services have been rendered or supplies made; provided that Advance or On Account payments may be made in the exceptional cases against bank guarantee of 110% of such advance amount.

Transparency, fair competition and elimination of arbitrariness in the procurement process

All contracts for procurement of goods shall be made in a transparent, competitive and fair manner. The following are some of the measures for achieving these purposes-

- (a) the text of the tender documents shall be self-contained and comprehensive without any ambiguities. All essential information shall be clearly spelt out in the tender documents

in simple language. The tender documents shall contain, inter alia, -

- (i) the criteria for eligibility of the tenderer (s) such as minimum level of experience, past performance, registration status, manufacturing, supplying, technical, professional and financial capabilities;
 - (ii) eligibility criteria for goods indicating any legal restrictions or conditions regarding manufacturing and supplying of goods which may be required to be met by the successful tenderer;
 - (iii) the procedure for submitting the tenders;
 - (iv) the date, time and place of opening of the tenders;
 - (v) terms of delivery; and
 - (vi) any other terms for performance of contract, as may be prescribed.
- (b) provision shall be made in the tender documents to enable a tenderer to make queries about the conditions, processes and / or rejection of the tender;
 - (c) provision for settlement of any dispute emerging from the contract, shall be made in the tender documents;
 - (d) the tender documents shall indicate clearly that the contract shall be interpreted under Indian Laws and in case of a legal dispute the same shall be subject to local or pecuniary jurisdiction of the Courts of Himachal Pradesh;
 - (e) the tenderer (s) shall be given reasonable time to send their tenders;
 - (f) the tenders shall be opened in the presence of tenderer (s) or their authorized representatives, if present at the time of opening of tenders;
 - (g) the standard specifications of the goods shall be broad based and clearly stated without any ambiguity so as to attract sufficient number of tenderer (s) with a view to safeguard the interest of State Government;
 - (h) prior to inviting of tender for procurement of costly goods of highly technical nature involving latest technology or execution of costly turn-key contract(s), a conference of prospective tenderer (s) may be convened in the manner as may be prescribed for clarification of doubts and settlement of issues relating to minimum acceptable level of specifications;
 - (i) factors to be taken into account for evaluating the tenders and the criteria for awarding the contract to the lowest tenderer shall be clearly indicated in the tender documents;
 - (j) the evaluation of tenders shall be made strictly in accordance with terms and conditions of tender documents;
 - (k) Where the price quoted by the lowest tenderer is highly excessive as compared to prevalent price justification, negotiation may be held with lowest tenderer to bring the price below justification. If the negotiation with lowest tenderer fails to result in an acceptable contract, Heads of PMUs may proceed to hold negotiation with the next ranked tenderer and so on;
 - (l) contract shall be awarded to the lowest tenderer; provided that where the lowest tenderer is not in a position to supply the full quantity required, the remaining quantity may be ordered to the next higher tenderer at the rates offered by the lowest tenderer on the same terms and conditions; and
 - (m) where the rates of more than one firm have been approved for the same item, time and cost effectiveness may be kept in view.

Efficiency, Economy and Accountability in Procurement System –

To ensure efficiency, economy and accountability in the procurement system, the following factors shall be taken into account:-

- (a) for avoiding delay, appropriate time frame for each stage of procurement shall be specified by the Department;
- (b) for minimizing the time needed for decision making and implementation of contract, the Department shall act as per delegation of financial powers as may be prescribed; and
- (c) the Department shall award the contract within the validity period stipulated in the tender documents; provided that extension in time period in the validity period may be allowed by the Competent Authority only in exceptional circumstances for which reasons shall be recorded in writing.

Buy Back Offer –

The Department may decide with the approval of the Competent Authority to replace existing old goods with new goods of better version from the contractor by adjusting the cost of existing old goods as per mutual agreement for which a clause shall be inserted in the tender documents in the prescribed manner.

For hiring consultancy services, Guidelines for the Employment of Consultants under Japanese ODA Loans and Part-C of Chapter-6 of HPFR, 2009 shall be followed.

Preparation of Bidding Documents

- (1) Prior to invitation to bid, the PMU shall prepare the bidding documents.
- (2) The bidding documents shall contain the following matters:-
 - The nature of procurement, time required for procurement and technical specifications thereof,
 - Where bids are invited without carrying out pre-qualification, the criteria for qualification of bidders.
 - Where there is provision of site visit, information relating thereto,
 - If any pre-bid conference has to be held prior to submission of bid, information relating to such conference,
 - Instructions for preparing and submitting bids, the place for the submission of bids, the deadline for the submission of bids and the place, date and time for the opening of bids,
 - Component of price, the currency in which the bid price may be stated,
 - The criteria and methodology for the evaluation of bids and the selection of bidder,
 - The preferences to be given, if any, to local industrial or service enterprises, construction entrepreneurs and provision relating thereto,
 - Where any goods or construction works are to be procured by making separate lots and packages, such lots and packages and the manner of evaluation thereof,
 - Where alternatives to the technical specifications are also invited, the manner of evaluation of such alternatives,
 - Where a bid can be submitted even only for a portion of the goods, construction works or services to be procured, a description of such portion or portions,
 - The validity period of bid,
 - The amount, type, acceptable form and validity period of bid security to be furnished, performance or other necessary matters,

- The terms and conditions of the procurement contract and the modality of coming into force of that contract,
- Information that bids shall not be processed in the event of conflict of interest or information relating to legal action for fraud or corruption,
- Provision that the documents proving technical capacity and financial proposal (bid price) have to be submitted, and
- Such other matters determined by the PMU as to be involved in the pre-qualification documents or bidding documents.

The PMU shall make available the bidding documents upon collection of the charges as prescribed to any person, firm, organization or company that requests for the bidding documents in accordance with the notice for invitation to bids, and where pre-qualification is required to participate in the procurement proceedings, to those persons, firms, organizations or companies that have been pre-qualified and request for such document.

5. ACCOUNTS & FUND MANAGEMENT

5.1 Accounting Procedure

Objectives:

The objectives of the Accounting Procedure are -

- (i) To introduce necessary accounting system for finance, purchase, expenditure and auditing of the PMU;
- (ii) To prescribe forms and formats for recording the transactions;
- (iii) To record the assets and liabilities and various receipts and payments of the PMU properly; and
- (iv) To introduce effective public financial management system.

5.2 Accounting Principles

The PMU shall follow the following Accounting Principles -

- (i) PMU shall follow double entry commercial book keeping system of accounting;
- (ii) The financial year of the PMU shall be from the 1st April of the year to 31st March of the next year;
- (iii) All books of account of the PMU shall be maintained at its Head Office i.e. SPMU. In respect of the District PMU and Block PMU, the records shall be maintained by them in their respective offices;
- (iv) Receipts and Payments Accounts and Income and Expenditure Accounts for the whole year and Balance Sheet at year-end shall be prepared within three months after the closure of the financial year;
- (v) The maintenance of records shall be in such a way as to comply with requirements of the statutory acts and rules as well as financial rules and guidelines of Govt. of H.P. which is applicable to the societies.
- (vi) All the accounts shall be balanced and monthly trial balance shall be prepared by the week of the subsequent month.

5.3 Budget

- (i) Budget generally depicts the estimated receipts and expenditure for the next financial year. The budget process shall, therefore, start from the month of November;
- (ii) First of all, estimated receipts shall be worked out. For this, the District PMU and Block PMU shall be asked to intimate their estimated funds that will remain unspent by the end of 31st March through their respective Controlling Officers. The SPMU shall also work out the funds that would remain unspent by the end of 31st March. Such unspent amount will come under the category “unspent balance of the current year”;
- (iii) The balance in the bank account of the SPMU, DPMU and BPMU shall be worked out. This will come under the category of “funds available in bank account”;
- (iv) Requirement of funds for the project works in the next financial year have to be decided by the PMU by the end of January along with the estimated expenditure;
- (v) The Budget prepared by the PMU shall be placed before the Executive Committee during January for its review and approval;
- (vi) The PMU shall, at the end of each quarter, review the progress of works done; funds position and take appropriate action.

5.4 Release of Funds

- (i) The SPMU shall send the draft annual plan of operation for the succeeding year to the District PMU not later than 30th September;
- (ii) In consultation with the Block PMUs, the District PMUs shall take steps to work out their work plan with financial forecast for each quarter and send the same to the SPMU, not later than 31st October every year;
- (iii) The SPMU, on receipt of the proposals, shall scrutinize, consolidate them along with their own office requirements. It shall then be send to the DoA, GoHP, in the form of Annual Plan of Operation before 31st December;
- (iv) The PMU shall release funds directly to the District PMUs and block PMUs based on the approved annual work plan and quarterly financial forecast.

5.5 ERP Accounting Software

The account books of PMUs will be maintained through tally accounting software only. The tally is powerful accounting programme that integrates with various other cooperated system, including sale, purchase and inventory finance etc. The books of account all PMUs i.e. Cash book ledger and inventory etc. will be maintained on tally software to synchronize data daily at SPMU level online/cloud to verify the accounts.

5.6 Fund Transactions

- (i) All remittance of the SPMU shall be received by means of account payee cheques/ draft/ RTGS/NEFT. The entry of receipt will be made in cash book on same day or by next day morning.
- (ii) All the books of accounts shall be maintained on Tally software and bills shall be prepared on PFMS application software. All the payments will be released through PFMS only.
- (iii) All the payment will be released through online mode RTGS/NEFT or account payee cheque/Bank draft if required. Cash payment should be strictly probated except emergency cases where payment upto Rs. 3000 is permissible.
- (iv) Manual register if any maintained, certificate regarding the number of pages contained in the Bank Book and Imprest Register is to be furnished on the front page of the Bank Book and Imprest Register by the authorized officer concerned;
- (v) No advance/Imprest will be allowed expect in case of urgency and in public interest only, with proper record duly maintained.
- (vi) The correction if any in account record shall not be made by overwriting or by erasing. The incorrect entry shall be clearly scored off and correct entry shall be made separately under attestation of the concerned authorized officer; and
- (vii) Physical verification of the cash book maintained on tally software shall normally be made by the authorized officer concerned at the end of the month or at the time.

Bank Transactions

- (i) All the contingent bills must accompany the financial sanction as per details given in **Form 6.7**.
- (ii) Bank operation shall be reduced to minimum number of accounts (Not more than 3).
- (iii) All cheques shall be received only in favour of PMU and it shall be ensured that they are crossed "Account Payee" immediately on receipt
- (iv) All cheque payments shall be changed to PFMS

- (v) Bank Statements are to be obtained by the 10th of every month for the preceding month's transactions and bank reconciliation statement shall be prepared for each of the Bank accounts in operation. Such reconciliation shall be reviewed for action, wherever necessary; and
- (vi) Debits and Credits towards bank charges, commission or interest which appear in the Bank Pass Book with supporting debit and credit slips received from the bank shall be recorded in the Bank Book.

Bank Book

- (i) The Bank Book shall be updated at least once in a day. The bank book shall be closed at the end of every day and the closing balance shall be arrived at. Entries in the bank book shall be made only for actual receipts and payments and not for any other reason;
- (ii) The Bank Book will be maintained through Tally Software.
- (iii) Any correction in the Bank Book shall not be made by overwriting or erasing. The incorrect entry shall be neatly struck off and the correct entry made clearly and attested by the officer authorized to sign the Bank Book;
- (iv) The Bank Book shall be produced to the Finance Officer, for verification at the end of every week, who shall verify the same and affix his/her signature on the bank book itself;
- (v) In case of PFMS transactions a daily printout of Bank Book shall be taken and weekly verification procedure as mentioned above shall be followed.
- (vi) The bank pass book shall be updated once in a month. In case, if the statements are issued by the bank instead of pass book, the authenticated statement shall be obtained on a monthly basis;
- (vii) Reconciliation of the Bank Book and the bank pass book/ bank statement shall be prepared on a monthly basis called as Bank Reconciliation Statement (BRS) in the following manner:

A- Balance as per Bank Book

B- Add:-

-Cheque issued but not presented (List enclosed)

-Other credits included in bank statement i.e. interest from deposits etc., if any, but not entered in bank book (List enclosed)

C- Total

D- Less:-

-Cheques deposited in bank but not credited by bank as per statement.

-Bank charges not entered in bank book.

-Cheques dishonored but yet reflected in bank book (List enclosed)

E-Balance as per Bank Statement

The BRS shall be prepared for every bank and produced before the Finance Officer for verification and signature.

5.7 General Ledger

In addition to the Bank Book/ Imprest Register, General Ledger shall be maintained in Form 6.7 to record individual account for each kind of receipt and expenditure. These ultimately help the PMU to prepare the monthly Trial Balance and Annual Statement of Income & Expenditure and other financial statements. General Ledger shall be in printed book and machine numbered. Entries in the General Ledger shall be posted on the basis of original entries in the Bank Book/ Imprest Register.

Connected columns in the General Ledger shall have brief particulars as contained in the Bank Book/ Imprest Register. In addition, subsidiary ledgers shall be maintained to record details of various transactions to supplement the General Ledger. The General Ledger Account shall be reviewed periodically by the Finance Officer.

5.8 Stock and Stores

- (i) The bills to be passed for payment shall bear the certificate that “Goods have been received in good condition and as per the specification” and that “Goods have been entered in the Stock Register at page”;
- (ii) Entry of such store be recorded in the Stock Register item-wise and issue of the consumable goods may be shown in the said register;
- (iii) Fixed assets, stocks and stores shall be entered in Register in **Form 6.8**.
- (iv) Physical Verification of the Stock and Stores shall be made annually by an officer authorized by the PMU and result of such verification shall be recorded in the concerned Stock Register; The stocks that are obsolete or declared unserviceable at the time of annual verification shall be intimated to the Project Director for preparing the write-off cases and after approval of the same in accordance with powers delegated for the purpose, these items shall be disposed of as per the approved procedure by the Executive Committee; and
- (v) Any loss of stock due to theft, misappropriation or damage shall be brought to the notice of the Project Director through set channels for necessary action and procedure of the State Government shall be undertaken.

5.9 Management of Funds at SPMU

- (i) All funds received by the PMU shall be deposited in nationalized banks/schedule bank and number of bank accounts should not exceed more than 3.
- (ii) Fund received in the shape of RTGS/NEFT/Cheque/Draft shall be entered in the RTGS/NEFT/Cheque/Draft Register to be maintained in **Form 6.1** and shall be deposited as quickly as possible in the bank account on same day or by next day morning any case not later than three working days;
- (iii) The Project Director and any other officer of the PMU duly authorized by him/her may operate the financial transactions of the PMU through the bank. The Project Director shall exercise overall power with regard to management of project funds including taking up remedial measures and bringing it to the notice of the Executive Committee as and when necessary;
- (iv) All bank accounts of the PMU shall be reconciled on monthly basis and all outstanding entries appearing in the reconciliation statement shall, as far as possible, be cleared before the next reconciliation is undertaken;
- (v) Fund requirement for the next one month or so may be worked out and the balance

amount, if any, in the bank account may be kept in saving account with nationalized banks.

- (vi) The interest accrued on saving bank deposits shall be retained by the State PMU (SPMU) and utilized for the implementation of the Project.
- (vii) The District PMU (DPMU) Offices /Block PMU (BPMU) Offices shall review the bank account statement half yearly and the interest accrued shall be sent to the SPMU account.
- (viii) The SPMU shall keep its record and the amount so accrued shall be utilized in project activities such as repair and maintenance and upkeep of PMU buildings and other day to day unforeseen activities;
- (ix) Separate ledger for Interest accrued shall be maintained in on ERP Tally Software. **Form 6.4**
- (x) For meeting day to day administrative expenses, the SPMU and DPMU shall maintain an imprest cash balance not exceeding Rs. 25000/-; and the imprest shall be replenished after spending Rs. 10000/-. The payment will be transferred through RTGS/NEFT.
- (xi) The unspent amount with District PMU at the end of 31st March shall be reported to the PMU Head Office before 7th April;
- (xii) All payments shall be supported by bills/ invoices or other documents and authorized by the Project Director in **Form 6.5**.
- (xiii) The revalidation for utilizing the unspent amount shall be subject to approval of the Executive Committee for carrying out the works beyond 31st March.

5.10 Management of Funds at the District PMUs

Funds Management

- (i) The District PMU shall open a separate bank account in a nationalized bank/scheduled bank for transactions with prior approval of the SPMU. This account shall be in the name of the District PMU and it shall be operated with single signature of the District Project Manager. However, No. of banks should not be more than 3 No. only.
- (ii) The District PMU on receipt fund from the PMU, shall enter the same in the “Register of fund received” (**Form 6.1**);
- (iii) The District PMU shall execute the works pertaining to his office complex after all codal formalities as per rules.
- (iv) Bank accounts of the District PMU shall be reconciled on monthly basis. Outstanding entries appearing in the bank reconciliation statement shall be cleared before the next reconciliation is undertaken in the same manner as described earlier;
- (viii) All remittance of the DPMU shall be received by means of account payee cheques/ draft /RTGS/NEFT. The entry of receipt will be made in cash book on same day or by next day morning.
- (v) All the books of accounts shall be maintained on Tally software and bills shall be prepared on PFMS application software. All the payments will be released through PFMS only.
- (vi) All the payment will be released through online mode RTGS/NEFT or account payee cheque/Bank draft if required. Cash payment should be strictly probated except emergency cases where payment upto Rs. 3000 is permissible.
- (vii) Manual register if any maintain certificate regarding the number of pages contained in the Bank Book and Imprest Register is to be furnished on the front page of the Bank Book and Imprest Register by the authorized officer concerned;

- (viii) No advance/Imprest will be allowed except in case of urgency and in public interest only, with proper record duly maintained.
- (ix) The correction if any in account record shall not be made by overwriting or by erasing. The incorrect entry shall be clearly scored off and correct entry shall be made separately under attestation of the concerned authorized officer; and
- (x) Physical verification of the cash book maintained on tally software shall normally be made by the authorized officer concerned at the end of the month or at the time.

Bank Book

5.11 Management of Funds at the Block PMU

Funds Management

- (i) The Block PMU shall open a separate bank account in a nationalized bank for transactions with prior approval of the SPMU. This account shall be in the name of the Block PMU and it shall be operated with single signature of the Block Project Manager;
- (ii) The Block PMU on receipt fund from the PMU, shall enter the same in the “Register of fund received” (**Form 6.1**);
- (iii) The Block PMU shall execute the works in their jurisdiction after completing all the codal formalities.
- (iv) Bank accounts of the Block PMU shall be reconciled on monthly basis. Outstanding entries appearing in the bank reconciliation statement shall be cleared before the next reconciliation is undertaken in the same manner as described earlier;
- (v) Miscellaneous advances, if any required, to be paid shall be recorded in the “Register of Miscellaneous Advances” in **Form 6.9**;
- (ix) All remittance of the BPMU shall be received by means of account payee cheques/ draft /RTGS/NEFT. The entry of receipt will be made in cash book on same day or by next day morning.
- (x) All the books of accounts shall be maintained on Tally software and bills shall be prepared on PFMS application software. All the payments will be released through PFMS only.
- (xi) All the payment will be released through online mode RTGS/NEFT or account payee cheque/Bank draft if required. Cash payment should be strictly probated except emergency cases where payment upto Rs. 3000 is permissible.
- (xii) Manual register if any maintain certificate regarding the number of pages contained in the Bank Book and Imprest Register is to be furnished on the front page of the Bank Book and Imprest Register by the authorized officer concerned;
- (xiii) No advance/Imprest will be allowed except in case of urgency and in public interest only, with proper record duly maintained.
- (xiv) The correction if any in account record shall not be made by overwriting or by erasing. The **incorrect** entry shall be clearly scored off and correct entry shall be made separately under attestation of the concerned authorized officer; and
- (xv) Physical verification of the cash book maintained on tally software shall normally be made by the authorized officer concerned at the end of the month or at the time.

Maintenance of Accounts

- (i) The Block PMU shall be responsible for maintenance of account vouchers for the project works executed by it;

- (ii) All necessary records like the Bill Register (**Form 6.10**), Work Progress/ Material Supply Register (**Form 6.11**), Measurement Book, Muster Roll, etc., wherever necessary shall be maintained and sent to the DPMU for drawal and payment;
- (iii) All works shall be inspected / measured / checked and then only bills shall be prepared by the Block PMU for submission to the District PMU. The measurement books shall be invariably maintained for such works as prescribed in the procedure of the State Government;
- (iv) The bill shall be certified by the Block Project Manager regarding the quality and quantity of the works executed;
- (v) A register of work bills sent to the District PMU shall be maintained in **Form 6.12**. After the bills are passed by the District PMU, the amount for which the bills have been passed shall be entered in the said register;
- (vi) No records of the Block PMU relating to HPCDP-II works shall be destroyed without the prior permission of PMU Head Office.

5.12 Income Tax

For all payments made to contractors and service providers, income tax shall be deducted in accordance with the procedure and at the rates as specified in the Income Tax Act, 1961 under section 194 C. The details of Income Tax deducted shall be recorded in the Tax Deducted at Source (TDS) Register in **Form 6.13**.

5.13 Goods & Services Tax (GST)

Goods & Services Tax on invoices of contractors and suppliers shall be made as per the provision of the relevant Act and Rules. The details of Goods & Services Tax payments shall be recorded in the Goods & Services tax register in **Form 6.14**. All invoices submitted by the contractor/ supplier shall show the amount of GST separately, and processing the invoice the PMU shall check and ensure that GST and levies are shown separately.

In case of reimbursement of GST paid, this shall be done in accordance with the rates prescribed from time to time by Government of India on production of payment of GST by the contractor/ consultant/ supplier.

SPMU/DPMU/BPMU shall deduct TDS (GST) @ 2% where the payment to be released/contract amount is above Rs. 2.5 Lakhs.

5.14 Introducing Public Financial Management System in HPCDP-II

Public Financial Management System (PFMS) is a web-based application in online management of information and decision support system. The purpose of this system is to track and monitor the fund disbursement and utilization under various implementation bodies on real time basis. This common electronic platform may be utilized in HPCDP-II for complete tracking of fund flow from the SPMU to all implementing agencies (BPMUs, DPMUs, SAU, service providers etc.). This will enable SPMU in real time monitoring of disbursements and utilization of funds and promoting transparency and tangible improvements in the overall financial management.

Steps Involved in PFMS-

1. Agency registration.
2. Create Maker and Checker.
3. Entering of Opening Balance as per Cash Book
4. Receipts of funds from different sources.

5. Transfer of funds to other implementing agencies.
6. Advances to service providers/ vendors, line departments and staff.
7. Expenditure incurred by implementing agencies.

Agency registration

For undertaking any transaction under PFMS SPMU, all BPMUs and DPMUs should register themselves under PFMS as AGENCY. Each unit will be treated as individual agency and registered in the PFMS Platform at SPMU level before they start transaction under the Project.

Registration of Child Level Agency

All BPMUs and DPMUs shall be registered as Child Agency under SPMU as fund will be released from SPMU to these units. The child level agencies will be registered after logging in to the parent Agency i.e. SPMU.

Agency Administrator

The following officers of the respective PMUs have been designated as Agency Administrator under PFMS at State, District, Block and level with full powers (i.e.) to approve Agency registration, to create Agency Users as Data Originator (Maker), Data Approver (Checker).

Sl. No.	Agency	Operational Status	Administrator
1	State Project Management Unit	State Level	Finance Officer, SPMU
2	District Project Management Unit	District Level	DPM
3	Block Project Management Unit	Block Level	BPM

Agency Data Originator (MAKER) / Agency Data Approver (CHECKER):



Agency Data Originator (MAKER)

An official responsible for processing the payment shall be the Agency Data Originator (MAKER) and will initiate the payment process under PFMS.

MAKER: Create/Manage all vendor/Supplier/Employee payee, Project Opening balances, Add new Account number, mapping new source of fund to Account number, Payment process entry and other entry level operations created by Maker.

Agency Data Approver (CHECKER)

The competent authority to make payment from the particular account, on satisfaction that all the conditions and procedures ordered by the Project authority for making payment has been duly followed and the transaction is valid and legal shall authorize the payment who is recognized as Agency Data Approver (CHECKER).

The below table shows the authorized Maker and Checker

Sl No.	Agency	Operational Status	Agency Data Originator (Maker)	Agency Data Approver (Checker1)	Agency Data Approver (Checker2)
1	SPMU	State Level	Accountant	Finance Officer	DPD
2	DPMU	District Level	Do	SMS/ADO	DPM
3	BPMU	Block Level	Do	SMS/ADO	BPM

Procedure to be followed in case of Transfer/ Retirement of officials or demittance of office by users:

After an official is relieved from a particular post on transfer or otherwise, heshe shall not authorize any transaction associated with the original post using his / her user credentials. All such transactions will be considered as illegal and misappropriation of Project funds and disciplinary and criminal action will be initiated for violation for financial norms and misconduct. The Agency Administrators is responsible for monitoring such transfer and should immediately make necessary modifications by disabling the transferred officials from the position of the authorized user of that agency. The retired officials should also be disabled from the position of the authorized user of the agency promptly.

Bank Account Configuration:

The accounts registered under Public Financial Management System (PFMS) of HPCDP-II of PMUs shall not make any transaction outside the purview of PFMS after it becomes operational. No cheque drawal is permitted from these accounts. All such transactions made from these accounts outside the purview of PFMS will be treated as null and void and illegal and appropriate disciplinary action will be initiated. All agencies should operate their accounts in a bank having interface with HPCDP-II PFMS. A new account should be opened in a bank having HPCDP-II PFMS interface.

Mode of Transaction:

All agencies will continue to adopt, follow and maintain the existing systems, procedure, conditions, formats, documents and registers as practiced under HPCDP-I as necessary for making a transaction or payment from a particular fund or bank account. The change in procedure brought by adopting PFMS is limited to the issuing of cheque only. Under PFMS enabled transactions, instead of payment through cheque the payment will be digitally authorized by e-transfer.

All payments shall be made only after the bills are passed by the Competent Authority or by the official authorized by the Competent Authority. The bill passing authority shall check and examine the bills as regards to its admissibility with reference to sanction, the propriety of the claim and

the arithmetical accuracy. If on such check and examination the bill is found to be correct, he/she shall pass the bill. No payment will be made unless the work has proper administrative and technical sanction from competent authorities, necessary budget provisions and duly measured and check measured by the engineers concerned.

Registration of Vendor/Service Provider/Line Department executing the work as implementing agency

Individual Vendor Registration

The suppliers, contractors need to be registered as vendors under HPCDP-II PFMS by the agency for making any payment to them. The PMUs can register such vendors related to their requirement. The vendors should be registered after verification of necessary documents and the same has to be entered and maintained in separate register containing all the information of vendors.

Note-

Inventory for office equipment/stationery etc. should be made at beginning of the FY and accordingly vendor for supplying required items should finalized through tender and registered in the HPCDP-II PFMS. Likewise selected service providers for construction works etc. should also be finalized through tender and registered in the HPCDP-II PFMS for making payments. Line Departments like SAU and KVKs also should be registered for transfer of funds for execution of works.

Transfer of Salary

This simply involves transferring the salary amount and other benefits (called transfers) directly to the employees' bank accounts through HPCDP-II PMFS.

Digital Signature Certificate (DSC) Enrolment

A Digital Signature Certificate is not only a digital equivalent of a hand written signature it also adds extra data electronically to any message or a document where it is used to make it more authentic and more secured. A DSC requires periodical renewal. As per provisions of Information Technology (IT) Act, 2000, respective DSC key holders are fully responsible for all transactions made using their DSC.

EAT Module

The process of feeding the day to day transactions as recorded in the cash book on the PFMS portal by an agency registered on PFMS, is called expenditure filing and expenditure filing is done through EAT Module of PFMS. An agency should be registered on PFMS for filing expenditure

The Transactions in EAT Module of PFMS (like a Cash Book)

DEBIT	CREDIT
Expenditure	Funds from JICA
Advances and Settlements	Funds from State Government
Transfers & Managing Returns	Funds from others sources
Surrenders	Investments
	Interest Received
	Managing Returns

Expenditure:-

After completion of registration process, the Agencies can login to PFMS portal and can create Maker and Checker type users to use Expenditure-Advance-Transfer modules (EAT module) for transferring funds or advances to lower level Agencies and e-payments to vendors, employees etc. This is an extremely important functional module of PFMS for monitoring the ultimate utilization of funds.

Features of MIS of HPCDP-II PFMS

Reports are available with Administrative and Hierarchical based aggregation with slice and dice features.

The contents covered will be

- Budget
- Allocation
- Cumulative Expenditure
- Bank Balances/Allocated Limits
- Expenditure, Advances, Transfers on periodic basis with current position
- Progress in Physical Activities

Detail and Type of Reports

Operational Reports

- Comparative position of Quarter Wise, Year Wise releases
- Agency/Unit wise Releases, Component types wise releases
- Current year quarter wise releases and total release against budget
- Quarter Wise Allocation & Expenditure

Performance Reports

- Activity level of DPMUs in terms of quantitative achievements

Daily Transaction Reports

- Regular Reports for accounting for each agency/unit like Cash Book
- Regulatory and compliance Reports
- Statutory Reports like Utilisation Certificate (UC)

E-Payment Reports

- Transaction Voucher
- Period Wise Payment status Reports
- Daily Credit and Debit Transaction Reports at entity and aggregation level
- Stage Wise Payment Transactions Details
- Rejected/Failed Transactions with reason
- Level Based and period based Aggregated/Detailed Payments related debits and credits status
- Transactions not delivered and Status Pending

Reconciliation of Transactions in HPCDP-II PFMS

- Periodic position of automated reconciled Transactions

- Period Based Unreconciled Outstanding Transactions
- Reconciliation of ePayment Transactions

Dashboards & DSS

- Agency/Unit Score Cards against set parameters –Bank Dashboards for their performance
- Performance against Key Performance Indicators (KPIs) based on parameters
- Events and Triggers based of critical factors like availability of funds, amount spent more than limits/budget/allocation, cash transactions based on amount of transactions
- Dashboard for DPMUs

Communication & Knowledge Management /Help Desk

- SMS to agency/individual for funds transferred and received in account
- E-Mail Messages to agencies for transactions
- Events based triggers for alerts for action
- Sharing of changes in application and availability of new functionalities
- Availability of application manuals

Reconciliation

The system provides for assigning the Unique Transaction Id called **HPDP-II PFMS**

Transaction Id to each of the transaction to be maintained throughout the lifecycle of the transactions till these get reconciled. The transaction status at each stage can be tracked and made available to the related agency/unit for information and corrective actions (if required).

Any event of exception is connected to triggers and alerts depending on nature of such events to various role holders. Rejected/Exception transactions are tracked with reasons for re-origination to ensure that transactions are not pending for payment and cross references in these transaction are mentioned to satisfy the reconciliation conditions. Transaction status is appropriately compared with each transaction in batch provided to the sponsored bank to ensure integrity and consistency between origination and responding system. Wherever there is any missing link, the related parties join hand resolve and reconcile within the prescribed time cycle say 48 hours. Anything beyond this threshold becomes critical to resolve through escalation process.

Audit Trail

Each transaction once captured is linked to each other by maintaining history and current status. The system provides for back tracking and forward tracking process of transactions. On enquiry, any transaction observed to be abnormal can give the status from its origination till the time query is made. The transactions capture time, maker, checker, system IPs (MAC) and their actions which appear in the history of transaction.

5.15 Loan Disbursement Procedure

The loan for HPCDP-II will be disbursed by JICA through Commitment Procedure and Reimbursement Procedure. Under the Project, Commitment Procedure will be applied for Consulting Services, and Reimbursement Procedure will be applied for the rest of the other works.

- 1) Commitment: After the letter of credit (L/C) is issued by L/C issuing bank and L/COM is issued by JICA, supplier can receive the fund from JICA passing

through only commercial banks (L/C issuing bank and supplier's bank). This is applicable for foreign currency payments only.

- 2) Reimbursement: After DoA makes payment to suppliers, DoA request JICA through CAAA to reimburse the fund. In this case, the funds transferred by JICA to the bank account of the Government of India will pass through the Government of Himachal Pradesh through DoA.

The reimbursement procedure for Japanese ODA Loan dated October 2008, as amended from time to time, shall apply for disbursement of the proceeds of the loan for payments made to the supplier(s) of the eligible country (ies) with stipulations as contained in schedule 6 of the reimbursement procedure

General administration cost, all fiscal levies, charges, taxes, and duties imposed by the Government of India or any other department of the Central or the State Government with regard to any activities of foreign and local contractors and consultants for HPCDP-II constitute non-eligible expenditure for the purpose of reimbursement from JICA; and shall be borne by the DoA, GoHP.

(Refer: JICA Commitment *Procedure for Japanese ODA Loans, Oct. 2008*)

5.16 Audit of Accounts

- (i) The accounts of the PMU shall be audited by Internal Auditor or Chartered Accountant on quarterly basis for the complete financial year and will prepare the annual standard audit report and statement of expenditure on the prescribed format. The accounts of the PMU shall also be subjected to CAG audit.
- (ii) The audited accounts along with the auditor's report and CAG report shall be submitted to the Executive Committee through DoA for consideration and approval.
- (iii) The audited accounts and the audit report together with observations, if any, of the Executive Committee shall be submitted to the Governing Council for consideration after the meeting of the Executive Committee.

A copy of the annual audited accounts and the audit report, shall be submitted to the JICA India Office.

Form 6.1: Register for Fund Received

Sl. No.	Date of Receipt	Money Receipt		From whom Received	Name of the Bank
		No.	Date		
1	2	3		4	7

Amount	Date of deposit in bank	Name of the bank in which deposited	Signature of the officer – in-charge	Cash book Relevant dr. Item/vr. no.	Remarks
8	9	10	11	13	14

Form 6.2: Money Receipt

Book No.....

ReceiptNo.....

Received with thanks from.....

The sum of Rs..... (Rupees.....)

By RTGS No.....

on account of

Date.....

Signature of Received Officer

N.B: The money receipt form should be maintained in duplicate forms and the duplicate copy to be retained in the receipt book itself.

Form 6.3: Stock Register of Money Receipts

Date of Receipt	No. of Books received	Book Nos		Receipt Nos.		Signature of Office-in-Charge	Date of Issue
		From	To	From	To		
1	2	3	4	5	6	7	8

No. of books Issued	Books Nos.		Receipt Nos.		Signature of Office-in-Charge	Remarks
	From	To	From	To		
9	10	11	12	13	14	15

Form 6.4: Interest Accrued Register

Savings Deposit Bank Account No.	Period	Rate of Interest	Amount of Interest (Rs.)	Signature of Officer-in- Charge	Remarks
1	2	3	4	5	6

Form 6.5: Expenditure Sanction

HPADS
HPCDP-JICA ODA
HMR (Sanction)-2012-13

Office Order

In exercise of the power vested in me vide PoM under article No. ---- delegated in item No.....by the Executive Committee for the drawl of Rs..... (Rupees..... only.

The expenditure to be incurred on
.....

The expenditure of this account could be met out of funds provided under Head
.....
.....
.....

Demand No.....
Activity Wise.....

Project DirectorPMU

Form 6.6: Bank Book/ Imprest Register

Receipt				Payments			
Date	ReceiptNo.	Particulars	Amount (`Rs.)	Date	Voucher No.	Particulars	Amount (`Rs.)

Form 6.7: General Ledger

Name of the Account:

Account Code:

Date	Voucher No.	Accounts Mode	Narration	Reference of Cash Book/Bank Book	Debit Amount (Rs.)	Credit Amount (Rs.)
		To / By Balance b/f				
		By/To Balance c/d	Total of transactions for the period			

Form 6.8: Assets, Stocks and Stores Register

Sl. No	Date	Opening Balance	Quantity Received	Price/ Cost	From whom received/to whom issued	Quantity issued	Closing balance	Remarks (Store-in-charge)	Reference of Cross entry if any

Form 6.9: Register of Miscellaneous Advances Paid

Sl. No.	Date of Payment	Name of Employee	Amount of Advance Paid (Rs.)	Purpose of Advance	Date on which voucher submitted	Amount for which voucher submitted (Rs.)	Balance amount refunded (Rs.)	Amount Outstanding (Rs.)	Details of Cash Book/ Voucher No. for the adjusted voucher amount	Remarks
1	2	3	4	5	6	7	8	9	10	11

Form 6.10: Register of Bills Received

Date	Bill No. & Date	Amount of the bill (Rs.)	Brief details of bill	Amount for which the bill is passed (Rs.)	Date of passing	Amount of Advance, if any paid (Rs.)	Amount of advance outstanding after passing bill(Rs.)	Date of payment with Cash Book/ Voucher. No.	Initial of Authorize dOfficer
1	2	3	4	5	6	7	8	9	10

Form 6.11: Work Progress/ Material Supply Register

Serial Number	Date of Approval of Work/ Material Supply Receipt	Nature of articles	Nature of Works	When begun
(1)	(2)	(3)	(4)	(5)

When Completed	Date of Issue of Articles	Signature of Officer In charge	Remarks
(6)	(7)	(8)	(9)

Form 6.12: Register of Work Bills Sent to the District PMU

Date	Bill No. & Date	Amount of the bill (Rs.)	Brief details of bill	Amount for which the bill is passed (Rs.)	Date of passing	Amount of Advance, if any paid (Rs.)	Amount of advance outstanding after passing bill (Rs.)	Date and Reference of Bill Sent to DPMU	Initial of Authorize d Officer
1	2	3	4	5	6	7	8	9	10

Form 6.13: Tax Deducted at Source Register (Income Tax)

Sl. No	Name and address &Income Tax Registration No. (PAN) of Contractor/Supplier	Gross value of the Bill(Rs.)	Amount credited or Paid(Rs.)	Date of Payment	Date of Tax Deduction
1	2	3	4	5	6

Amount of deduction (Rs.)	Date of Deposit &Challan No.	Signature of Accountant	Signature of Officer-in-Charge	Remarks
7	8	9	10	11

Form 6.14: Goods & Service Tax (GST) Payment Register

S. No.	Date of Invoice	Nature of Service	Name of Service Provider	Address of Service Provider	GST Registration No.	Gross Amount of Invoice (Rs.)	GST (Rs.)	Education Cess (Rs.)	S H E Cess (Rs.)	Total GST Paid (Rs.)	Invoice Paid on	Invoice Amount (Rs.)

6. DELEGATION OF POWERS

6.1 Introduction:

The PMU shall be working under the overall guidance and directions of the Executive Committee. The Project Director of the PMU shall be the principal executive officer of HPCDP-II and shall be responsible for proper administration, management and operation of the Project. The Project Director will be the Controlling Officer of the officers and staff of the PMU.

The District Project Managers of the District PMU Offices shall be the overall in-charge of the functioning and operation of HPCDP-II in their respective districts and shall have the administrative control over the Block PMUs within their respective jurisdiction. The District Project Managers of the District PMU Offices will be the controlling officer of the officers and staff of the respective District PMU Office and the Block PMU Offices within their respective jurisdiction.

The Block Project Managers of the Block PMU Offices shall be the overall in-charge of the functioning and operation of HPCDP-II in their respective block areas.

6.2 Administrative and Financial Powers:

The PMU shall exercise powers delegated to it by the Executive Committee of HPCDP-II from time to time. The present delegated powers are given in **Table 6.1**.

Table 6.1: Delegation of Powers

S. N.	Nature of Power	Authority and Extent of Power			
		Chairman, Executive Committee	Project Director, PMU	District Project Manager	Block Project Manager
1	(a) Administrative Approval &Expenditure Sanction.				
	<p>i) To accord administrative approval and expenditure sanction for new estimates of construction of civil works (irrigation infrastructure including solar pumping system, buildings and farm access roads etc.) including tools and machinery and other material required for these works.</p> <p>ii) To accord administrative approval and expenditure sanction for the repair/ maintenance estimates of civil works (irrigation projects including solar pumping system, buildings and farm access roads etc.</p>	<p>Full power</p> <p>Full power</p>	<p>Rs.2.5 Crore</p> <p>Rs. 25 lakhs subject to condition that the Repair/ maintenance estimate is duly recommended by the PMC</p>	<p>Rs. 90 Lakhs</p> <p>Rs.15 lakhs subject to condition that the Repair/ maintenance estimate is duly recommended by the PMC</p>	<p>Rs. 10 Lakh</p> <p>Rs. 2 lakhs subject to condition that the Repair/ maintenance estimate is duly recommended by the PMC</p>
2	Power to accord technical sanction To accord technical sanction for all types of civil, Electrical WS & SI works, minor/ major irrigation works, farm access roads, buildings etc.	-----	Rs.2.5 Crore subject to the condition that the DPR of each subproject is duly recommended by the PMC	Rs. 90 Lakhs	Rs. 10 Lakh
	Agreement Acceptance of lowest tenders and award of work with or without negotiation with the				

	<p>lowest tenderers for construction / repair & maintenance of civil works/ purchases/ hiring of services etc.</p> <p>Note:- The Power for agreement are subject to the following condition:-</p> <p>(a) If the lowest tender is higher than the market rate, approval of the higher authority shall invariably be obtained.</p> <p>(b) If the tender other than the lowest tender is accepted approval of the Project Director shall obtained, and in case of project Director, approval of Chairman, Executive Committee shall be obtained.</p>	Full power	Rs.2.5 Crore	Rs. 90 Lakhs	Rs. 1.00 lakh
3	Acceptance of single tender with or without negotiation.	Full power	Rs. 1 crore	Rs. 5.00 lakhs	-----
4	<p>Misc Purchases</p> <p>To sanction purchases of Misc stores item on rate contracts approved by the Controller of Stores, Govt. of HP and Govt. of India.</p>	Full power	Rs. 2 lakhs per item with annul ceiling of Rs.50 lakhs	Rs. 0.50 lakhs per item with annul ceiling of Rs.10 lakhs	Rs. 0.25 lakhs per item with annual ceiling of Rs.5 lakhs
	To sanction direct purchases of stores from local market after exhaustive exploration of all the approved sources of supply i.e. local purchase through quotations.	Full power	Rs. 1.50 lakh per item with annual ceiling of Rs. 25 lakh	Rs. 0.50 lakh per item with annual ceiling of Rs. 5 lakh	Rs. 0.20 lakh per item with annual ceiling of Rs. 2 lakh

	To sanction purchase from principal manufacturers or their authorized dealers.	Full power	Rs.75 lakh per item	Rs.25 lakh per item	Rs.5 lakh per item
	To sanction purchase of goods through GEM.	Full Power	Rs.10 lakh per item	Rs. 5 lakh per item	Rs.0.50 lakh per item
5	Purchase & New Furniture etc. To accord expenditure sanction for the purchase of furniture including racks/ Almirahs etc.	Full power	Rs.2.5 lakh per item	Rs.0.50 lakh per item	Rs.0.10 lakh per item
	Repair of Furniture etc. To accord expenditure sanction for the repair of office/ training centre furniture, Almirahs, racks etc. and other similar items.	Full power	Rs.5 lakh per item	Rs. 1 lakh per item	Rs.0.05 lakh per item
6	Purchase of New Equipment. i) To accord expenditure sanction for the purchase of I.T. equipments, Computers, laptops, Photocopiers, Fax machines, projectors, Audio Video equipments, Survey equipment, Cameras, electrical fans, coolers, ACs, heaters and other electrical & electronics devices etc.	Full power	Rs.3 lakh per item	Rs. 1.5 lakh per item	Rs.0.20 lakh per item
7	Repair and maintenance of equipments. To accord expenditure sanction for the repair of I.T. equipment, Computers, Laptops, Photocopiers, Fax Machines, Projectors, Audio Video Equipment, Survey Equipment, Cameras, Electrical Fans, coolers, ACs, Heaters and other electrical & electronic devices etc.	Full power	Rs.10 lakh per annum	Rs.2 lakh per annum	Rs.0.50 lakh per annum

8	To accord expenditure approval and expenditure sanction: Hiring of building on rent for office accommodation.	Full power	Rs.25 lakh per annum.	Rs.10 lakh per annum.	Rs.2 lakh per annum.
	1) Payment of electricity, telephone, water charges, & other misc. expenses etc.	Full power	Full power	Full power	Full power
	Installation of telephone, intercom/ EPBX, internet & cable connection etc.		Full power	Full power	Full power
	Hiring of vehicle for project/ repair & maintenance/ P.O.L charges	Full power	Rs.50 lakh per annum	Rs.25 lakh per annum	
	Payment of insurance charges/ premium etc.	Full power	Rs.10 lakh per annum	Rs.5 lakh per annum	Rs.0.50 lakh per annum
9	To accord expenditure sanction for purchase of stationary articles/ printing of literature, banners, display boards, making of documentaries and other project advertisement/ publications etc.	Full power	Rs.25 lakh per annum	Rs.10 lakh per annum	Rs.5 lakh per annum
10	To accord expenditure approval and expenditure sanction for the purchase of inputs for field demonstration, organization of trainings & exposure visits, workshop field day etc.	Full power	Rs.20 lakh	Rs 5 lakh	Rs.1.00 lakh
11	To accord administrative approval and expenditure sanction for hospitality charges.	Full power	Rs.1.0 lakh per month	Rs.0.50 lakh per month	Rs.0.10 lakh per month
12	To accord administrative approval and sanction to write-off losses/ stores etc. for : (a) Unserviceable or waste materials.	Full power	Rs.10 lakh Rs.5 lakh	Rs. 2 lakh -----	Rs.0.05 lakh -----

	(b) Irrecoverable value of stores or public money lost by fraud and or by negligence of individual or similar other causes Actual losses of stock.		Rs.20 lakh	-----	-----
13	Purchase of New Vehicles:	Full power	Full power	-----	-----
14	Other Administrative Power: To accord expenditure sanction for the payment of salary of regular and outsource staff.	Full power	Full power	Full power in respect of staff of DPMU	Full power in respect of staff of BPMU
	Approval of tour programme, payment of travel expenses (TA/DA) as per entitlement	Full power	Full power for travel within and outside the state in respect of staff and officers of all PMUs and District Project Managers and in case of Project Director HoD of Agriculture Department	Full power for travel within the state in respect of staff and officers of the DPMU and Block Project Managers.	Full power for travel within the state in respect of staff and officers of the BPMU.
	Grant of Leave other than Casual Leave	-----	Full power in respect of staff and officers in the state level PMU and the District Project Manager, subject to the condition that it does not involve appointment of substitute in case of Project Director	Full power in respect of staff and officers of BPMU, including the BPM, and DPMU within his/her jurisdiction, subject to the condition that it does not involve	-----

			HoD of Agriculture Department	appointment of substitute.	
15	Grant of Casual Leave	-----	Full power in the respect of Staff and officers working in the state level PMU and the District Project Manager for whom he/she is the controlling officer. in case of Project Director HoD of Agriculture Department	Full power in the respect of Staff and officers working in the District PMU and the Block Project Manager(s) for whom he/she is the controlling officer.	Full power in respect of Staff and Officers working in the Block PMU whom he/she is the controlling officer.
	To accord sanction for Medical Reimbursement.	Full power	Full power in respect of staff of State Project Management Unit and DPMs.	Full power in respect of staff of District Project Manager Unit and BPMs.	Full power in respect of staff of Block Project Manager Unit.
16	To accord administrative approval and expenditure sanction for procurement / hiring of various services/ Agency.	Full power	Rs. 5 Crore per item	-----	-----
17	To accord expenditure sanction for deviation of purchases/ civil works/ repair etc.	Full power	Up to 20%	10 %	5 %

Note: - The powers are subject to compliance of all Codal Formalities, MCA guidelines, H P. Govt. rules and the procedure prescribed in the Project Operation Manual. In case of any conflict or collision, the procedures of Project Operational manual shall prevail

7. MANAGEMENT OF PROJECT ASSETS

7.1 What Is Asset Management?

Asset management is a planning process that ensures that the maximum value from each of assets could be obtained and has the financial resources to repair, maintain and replace them when necessary. Asset management also includes developing a plan to reduce costs while increasing the efficiency and the reliability of assets.

Successful asset management depends on knowing about system's assets and regularly communicating with officials about future needs. Asset management plan should be thoroughly reviewed at least once a year, noting any relevant changes. Throughout the year, a running list of items should be kept to consider or include in the annual update.

7.2 Asset Management Plan:

An asset management plan is a long-range planning document that provides a framework for understanding the assets an organization owns, services it provides, risks it assumes, and financial investments it requires. An asset management plan can help an organization move from reactive to proactive management of its physical and financial resources. This transition requires answers to the following questions:

- What is an asset? What is not an asset?
- Which assets need to be managed?
- What are the conditions of the assets?
- What maintenance and capital works are required? When and how much?
- How long until the assets need to be renewed?
- Which assets are critical?
- What levels of service must be provided?
- Are the current maintenance practices sufficient to sustain the service level?
- How should the assets be managed to provide services in the most efficient way?
- How can the asset data and maintenance system be updated to better facilitate maintenance practices?
- How much funding is necessary to sustain the delivery of services?
- Are there adequate resources to provide the services?

The answers to these questions help in the development of an asset management plan. An asset management plan is meant to grow and change with both the organization and the system for which it is written. In the spirit of continuous improvement, recommendations for future improvement activities were also developed and presented.

7.3 Community based Asset Management in HPCDP-II:

The Himachal Pradesh Crop Diversification Promotion Project is a farming community-based participatory project. Irrigation system will be provided from the Project to 296 Sub-projects which will be managed by Krishak Vikas Associations (KVAs). Sustainable management of these irrigation systems and operation and maintenance through community participation is required for post-project sustainability and supply of water in an efficient manner.

7.3.1 Community Grower Group Establishment:

Active participation of farmers, in the management of irrigation schemes is crucial for the long-term sustainability of the systems themselves, and for achieving project objectives. The project aims to build up the capacity and muster active participation of farmers right from the construction phase itself and where possible after the commissioning. Farmers will be organized in the form of Krishak Vikas Associations (KVAs). The KVA will collectively manage the field systems and shared assets. They will also form points of contact for engagement with BPMU/Satellite Offices in relation to planning, operation and maintenance.

The long-term goal for the KVA is that farmers will gradually learn technical operations and maintenance requirements of the systems and they will progress into legal entities responsible for own financing capable of making sound business decisions and over-taking more responsibilities in O & M of the systems. To achieve this whole suit of supports are planned and described below.

Choice of crops, seeds and planting schedule will form the basic decision of the KVA which will affect not only their food security and income, but also the operations of the irrigation systems. Therefore, there is a great need for KVAs to coordinate among the users of the irrigation system to discuss and agree on what they will grow, when to grow and when to irrigate. The KVA is a platform for members to share market information, including supplies of inputs, and selling opportunities and prices of farm produce.

Irrigation operation and maintenance is a core function of KVAs. Farmers will be involved at earlier stages of construction of the irrigation system, so that they have exposure to the system. Detailed system operation and maintenance manuals will be provided by the suppliers. Training modules will also be developed and implemented by the project management consultants. Key elements of the O & M include:

- a. Irrigation scheduling, including irrigation quota, timing and duration of operations, rotational supply within the system;
- b. Liaison with suppliers and Extension Officers;
- c. Pump operations and pump house safekeeping;
- d. Central pivot operations and rotations;
- e. Lateral sprinklers operations;
- f. Regular maintenance of pumps and sprinklers;
- g. Draining of residue water to prevent frost damage;
- h. Salt leaching to prevent salinization;
- i. Safe keeping of equipment during planting, harvesting, and non-irrigation seasons.
- j. Maintenance of growth chamber, storage facilities etc.
- k. Desilting of check dams, cleaning of water tanks.

The KVAs will collectively operate the field irrigation assets including small pumps, pump houses, pipes, sprinkler kits, drippers, and other tools and equipment. A simple asset management system is required to ensure safekeeping and maintenance of these assets. This includes clearly identified responsible persons, asset inventory, asset management procedures (to be developed with project management consultants).

The KVA will gradually build up funds from their agriculture activities to use for regular maintenance and emergency repair. They will be trained to develop financial capacity to design an irrigation and machinery use fee system applicable to the users. Each KVA member will be required to contribute towards its own O&M requirements. The contribution per household level will be determined during early project implementation stages with consultations with the community, project beneficiaries and local panchayet. Besides regular contribution, KVA also collect water charges on hourly basis as per demand of farmers. KVA also collects funds as a special contribution to carry out major repair of system as and when required.

Asset Management:

Asset management is another core responsibility of the KVAs and the KVAs assets will be managed as per O&M manual.

7.4.1.2 Asset Management Plan:

It is proposed the project develop a simplified asset management plan (AMP) that enable KVAs to manage the assets of transferred irrigation systems to them in the best/most cost effective and sustainable way.

The three most important things that should be considered in developing the AMP are set out in the following sections.

7.4.1.2.1 Asset Record Keeping:

Irrigation asset management is defined as “an integrated approach to improving the ability of an irrigation system to deliver water at a defined level of service in the most cost-effective manner”. The sustainability of an irrigation scheme refers to the proper functioning of the infrastructure, the people, agricultural enterprises, management and social systems in the long run. Thus, the irrigation schemes sustainability depends on:

- (i) **Governance:** Well defined procedures for governance, including cost effective institutional and technical setup to govern the scheme and to operate the system.
- (ii) **Capacity:** Ability of KVAs in terms of technical, financial, institutional and legal context.
- (iii) **Responsibility:** Ability to share the responsibilities of the beneficiaries in the irrigation management i.e., in operation, function and maintenance of an irrigation system.
- (iv) **Efficiency:** The irrigation water distribution calendar and schedule adhered to in order to avoid over irrigation or under irrigation of crops, while meeting the requirement of environmental flow

For the future sustainability of the irrigation schemes the following are suggested:

- (i) Modernizing irrigation systems: (a) check and maintain hydrants and distributary pipes in case of piped system (b) introduce the scope of irrigation service fee to improve water use efficiency.
- (ii) Improving irrigation system management, procedures, and communication by i) defining a governance system with clear responsibilities for different levels of assets ii) developing an asset management system with a clear asset registration, description of the assets including their location, status and repair needs, a classification of the

levels and responsibilities, (iii) improving participation in irrigation management: (a) interaction for different groups/levels in charge, (b) diversifying agriculture and developing agricultural business for the purpose of improving the capacity of farmers financial capacity to enable to pay for irrigation fee, (b) expand the role of KVAs as business organization/enterprises.

7.4.1.2.2 Asset Management Framework for Sustainable Irrigation:

A simple, probably notebook based, asset inventory will be built for use by farmers. A generic template is given at Page 152.

There are two types of Maintenance works for asset management.

- a) Preventive:** This type of maintenance is done to keep the structures and canals in the desired condition so that the canals operate without any problems.
- b) Corrective:** This maintenance is done after damage has occurred and it restores the system to the desired performance level.

The most well-known categories of maintenance are as follows

- a. Regular or routine maintenance
- b. Seasonal maintenance
- c. Periodic maintenance
- d. Emergency maintenance

- 1) **Routine or regular maintenance** includes all works necessary to keep the irrigation system well-functioning. Works like greasing of gates, maintaining channel banks, small desilting, weed removing, cleaning of hydrants, inspection and cleaning of emitters, cleaning and lubricating of pumps and engines (e.g. for moving of the sprinkler systems) etc. These are small repair works done on a regular basis throughout the year. This maintenance work is most critical and economic, since small repairs identified earlier and carried out quickly will stop more major problems later on. This type of maintenance doesn't need any high technical skills.
- 2) **Seasonal maintenance** arises before and during the main cropping season. Cleaning of pipes (flushing) and draining for winter, cleaning of emitters (sprinkler and drippers) and repairing of leakages and removal of field drip lines for the winter are more appropriate for the sprinkler and dripper systems. These are some preventive types and are temporarily made and in later stage may require periodic maintenance.
- 3) **Periodic maintenance** is categorized as medium to large repairs and done on a periodic basis, annually or biannually or in certain intervals like 5 years etc. depending upon the necessity and funds available. Repairs or replacement of (parts of) the pumps, replacement of sections of pipes are termed as periodic maintenance. This type of work needs preparation and detailed planning, drawings, estimates and close supervision during construction.

7.4.2 Community-based Geographic Information System (GIS):

Implementation of a community-based GIS asset management model may ensure that the irrigation assets could be operated and maintained sustainably. The assets mapped in the database cover the entire installed irrigation systems, including the Main and Field Irrigation Channels (FICs) along with structures such as pipe outlets, escape sluices, cross drainage works etc. The

database not only assists in managing and maintaining the irrigation assets, but also estimates the quantity of water needed for crops based on crop data. Having accurate information about how much water is needed and where means that farmers can adapt their practices to be more strategic about when and how they use their water allocation.

A community-based approach:

KVAs received training on the management of the irrigation systems, as well as construction and maintenance of field irrigation channels. Passing on the knowledge and capabilities required to operate these systems during capacity development training program.

Smartphone-based application shall be developed to help community motivators from each Sub-Project to capture and update crop and farmland data, including changes in land ownership (if any), on the GIS asset management system. By entering a few details in a user-friendly report form and uploading a photo, community motivators can also use the app to identify and seek approval from BPM/DPM for any critical repairs. This ensures that the system is kept up to date and that operational processes are as efficient as possible.



Figure 17: Asset Visualization in GIS

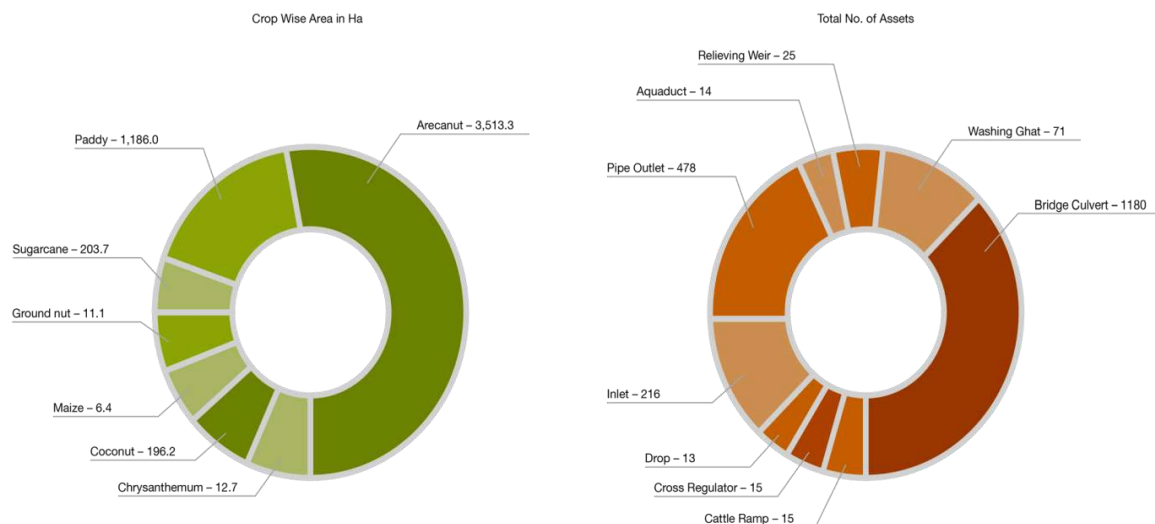


Figure 18: Mapping-crops-and-assets

7.4.3 Management of assets of Collection Centre-

During phase-I of HPCDP 23 collection centre have been constructed and equipped with farm produce handling and processing machineries. These collection centers will be used by Farmer Producer Organizations (FPOs)/SHG to be formed under HPCDP-II.

Since considerable volume of farm produces will be handled in collection centres a set of management guidelines for the assets created under the Project is necessary for to maintain the collection centre in good condition and also to maintain the safety and quality standard.

During Phase-I of the HPCDP 18 collection centres were constructed with cooling chamber facility. Management of Cooling Chamber for long term use and sustainability is given below-

- ✓ Temperature of both the chiller and produce should be monitored and maintained to minimise any exposure to alternating cold and warm temperatures that could result in moisture accumulation.
- ✓ The produce stored in the chiller should not exceed its storage capacity.
- ✓ The chiller cooling efficiency could be improved by installing more evaporators along the width of the chiller and positioning condensers on rooftop or away from narrow corridor walls.
- ✓ Inflatable air cushions or rubber pads at docking doors could help to prevent warm air infiltration into the chiller for sustaining it for long time.
- ✓ Plastic strips should be hung on the inside of doorway to minimise possible influx of warm air from the external environment into the chiller.

Management of Loading Area-

- ✓ The loading area should be sheltered and not exposed to direct sunlight.
- ✓ The temperature of loading area should be maintained between 18 to 23 °C.

General Monitoring and Maintenance-

- ✓ All work instructions, schedules and procedures should be clearly documented and operators should be trained to perform and document the adopted procedures for traceability.

- ✓ Temperature and humidity of the various operation facilities in the collection centre should be monitored and recorded regularly.
- ✓ Records of produce temperature and quality at various stages in the collection centre (e.g. upon receipt, before and after pre-cooling and packing, during storage and loading) should preferably be established and maintained.
- ✓ All equipment such as pre-cooling facility, refrigeration units, loading unloading devices, weighing devices and processing machineries should be maintained and calibrated regularly, preferably by accredited suppliers.
- ✓ Incoming produce and finished products should be adequately and effectively documented to ensure product traceability.

7.4.4 Management of Solar Pumping System (SPS)-

There are 103 sub- projects of LIS and STW including new and improvement scheme and solar pumping are expected to be installed to 83 LIS and STW sub projects. Most of the future growth in agriculture is likely to come from intensification, in which irrigation would play a key role (FAO, 2011). Long term sustainability of pumping system tends to economic sustainability of the system. Economic sustainability (viability) of SPS would be determined by (a) the input costs (b) the expected additional revenues from cultivation due to use of solar pump, and (c) the cost of alternative irrigation solutions, such as diesel or electric pumps. These in turn are influenced by key monitoring factors discussed below-

Peak daily water requirement:

The solar pump capacity and, hence, its capital costs (capex) directly depends on the peak daily water needs of a crop. The use of solar pumps would be more economic for crops having higher revenues per unit of peak water requirement. Choice of most suitable crops, the peak crop water need can be optimized with the use of micro-irrigation solutions, such as drip or sprinkler systems, which can be easily combined with SPSs depending upon the type of crop.

Depth or distance from water source:

The capacity of solar pump components is also determined by the pumping head which in turn depends on the distance from or the depth of the water source. The discharge rate from a solar pump declines almost linearly with the increasing pumping head. Thus, regions with lower water table will need solar pumps with higher capacity. Depending on the current water availability and seasonal variations choice of capacity should be made. The long-term water trends will also influence the techno economic viability of SAPs. Poor water recharge rates could lead to falling groundwater levels, in turn reducing the water discharge from solar pumps and irrigation capacity over time. In order to ensure long-term economic sustainability of SPSs, it would be essential to link their deployment with water management and harvesting schemes.

Solar Irradiance:

The water discharge from SPSs varies with the solar radiation, which in turn varies with the time of the day, month, and location. Monthly variation in solar radiation necessitates that the solar irradiance during the month with peak irrigation needs is factored in while deciding the size of solar array. This is crucial as solar panels contribute around 30–45% to the total solar pump cost and optimal sizing of solar array is essential to contain the system costs. In this regard, the use of efficient pumps (say, subsystem efficiency of around 70%), could help reduce the size of solar array required and hence, the total system costs.

Also, the daily variation in solar radiation can limit the pumping hours, particularly in regions with fewer peak sunlight hours or higher incidence of cloudy cover. In regions with severe fog, solar pumps might not work for days at length. Even though the irrigation requirements are lower during such periods, low irradiance can pose challenges in irrigation of certain winter crops, as has been observed in case of wheat cultivation in North Indian states. Use of water storage structures, such as overhead tanks, lined-ponds, etc., can help overcome these concerns and ensure reliable access to irrigation.

System quality and after-sales services:

The economic viability of solar irrigation is also influenced by the system quality as well as timely repair and maintenance. While poor quality components may lead to frequent breakdowns, lack of technically trained personnel or spare parts can result in delayed repairs and defunct systems. Lack of timely after-sales service has been cited as a major challenge faced by smallholder farmers. This underscores the need for regulating the quality of SPSs available for consumers, training of local technicians, and incentivizing suppliers to provide service warranty and timely services. Eligible suppliers have to comply with government prescribes technical specifications and quality standards besides providing free service warranty for 5-year period. To ensure timely after-sales service, HPCDP should established a toll-free complaint redressal helpline and make the suppliers bound to address the complaints within 72 hr.

7.4.5 Management of Farm Access Roads

Effective road asset management (RAM) follows a well-planned and systematic approach that examines the technical and administrative requirements for planning and implementing road upgrading and maintenance works. The processes followed should be guided by agreed policies at SPMU level, the policies having been developed through a process should be inclusive of all stakeholders. Asset management encourages transparency and adoption of good approaches and sound engineering methods that yield good results and encourage accountability.

Achieving stakeholder and road user participation:

Stakeholders in farm access roads include farmers, traders, transport operators etc. Stakeholders are primarily interested in the functional condition of the roads and will immediately express concern if there is difficulty accessing services due to the poor condition of the roads. Representatives of KVAs are key players in implementing the activity must be actively called upon to participate. Various means including public meetings etc. can be used to establish stakeholder views. The asset management approach must be explained in clear terms to them so that it can be understood by them, thereby allowing the attention to local needs to be balanced with the overall requirements.

Defining clear institutional responsibilities:

Responsibility for the management must be clearly allocated to the KVA. Free maintenance upto 5years should be made compulsory while awarding the contract for which some security be retained by the project from the contractor.

The asset management approach:

Road infrastructure asset management is expected to conform to the norms of standard asset management practices should be based on the following principles:

- Systematic and strategic approaches over a long-term period (5-10 years);
- Full consideration of stakeholder needs;
- Optimal allocation of resources;
- Consideration of life-cycle costing;
- Meeting performance requirements in the most efficient way; and
- Proactive management of risks.

Assessing Road Condition, Determining Needs:

Road condition surveys must be undertaken annually and report should be submitted for maintenance if any.

Determining road asset preservation needs:

The following are interventions that may be considered by road agencies in rural road asset management: **Routine maintenance:** this category will include works that are carried out on cyclical basis (e.g. full width grading or blading, tyre dragging, grass cutting, shoulder grading) or in response to the condition (e.g. pothole filling, drainage repair, repair of ancillary components). This category of works includes spot regravelling.

Periodic maintenance: re-gravelling of significant lengths through importation of material to replace lost material.

Rehabilitation: repairs to restore pavement to its original condition and functionality.

Reconstruction: total reconstruction of the road formation and pavement.

Maintenance works programming, planning and implementation process:

- ✓ Budget preparation and request for funding or post project arrangement for funding from MGNREGA etc.
- ✓ Road condition surveys and costing of works to be carried out on all roads to be included under maintenance;
- ✓ Establishing road maintenance priorities based on available resources, in consultation with the concerned KVAs;
- ✓ Procurement of contractors and works supervisors;
- ✓ Implementation of maintenance work following the work programmes;
- ✓ Continuous monitoring of work quality and progress;
- ✓ Regular weekly and monthly reports on expenditure and progress;
- ✓ Analysis of the information in the weekly and monthly reports to bench mark costs for each activity; and
- ✓ Use of the information from the cost analysis to update the planning and budgeting for the following year.

7.4.6 Management of wire crates, silt retention structures installed for Catchment area treatment

Sediment traps need regular maintenance, especially with new construction and after a heavy rain event, as water can transport significant amounts of sediment and fill them in. To maintain their effectiveness, they need to be cleaned out. Spacing of sediment traps should be enough to manage

the storm water runoff. It may be useful to monitor the quantity of material removed to identify problem areas.

Wire crates, need regular maintenance because they can fill rapidly on very erodible soil sites. Checking of silt fences regularly is needed especially after any moderate rainfall, and more on new construction sites. Another important aspect is to checking that the wire crate, is working correctly, and is sized to the site. If not that, enlargement will be required. During cleaning the wire crates, removal of sediment to a safe location where it cannot wash back into the crate should be looked into.

Regular maintenance includes the following-

KVA take this responsibility:

- Slit retention control structures should be inspected on a regular basis and after every large storm event.
- All temporary and permanent erosion and sediment control practices shall be maintained and repaired as needed to assure continued performance of their intended function.
- All maintenance and repair shall be conducted in accordance with an approved guideline.

7.4.7 Management of Farm Machineries-

The farm machinery to be provided to the farmers are summarized as below-

No.	Name of Machinery	Specification	Qt'y
Tractor / Power Tillers / Power Weeder			
1	Tractors	i. Tractor (08-15 PTO HP) ii. Tractor (15-20 PTO HP)	306
2	Power Tillers	i. Power Tiller (Below 8 BHP)	306
3	Power Weeder	i. Power Weeder (engine operated below 2 BHP)	1,008
		i. Power Weeder (Above 2 BHP)	1,008
Tractor/Power Tiller (Below 20 BHP) driven Equipment			
4	Land preparation / seed bedpreparation	i. MB Plow ii. Disc Plow, iii. Cultivator, iv. Harrow, v. Leveler Blade,etc.	306
5	Equipment for harvesting	i. Thresher, ii. Multi Crop Threshers, iii. Paddy Thresher, iv. Brush v. Cutter, vi. Winnowing Fan, vii. Maize Sheller viii. Reaper	306

		ix. Mower	
6	Chaff Cutter	i. Operated by Engine/Electric Motor below 3 HP Power Tiller, and Tractor of below 20 BHP Tractor)	918
7	Grass Weed Slasher		306
Manual/Animal Drawn Equipment/Implements/Tools			
8	Land preparation / seed bed preparation	i. MB Plow, ii. Disc Plow, iii. Cultivator, iv. Harrow, v. Leveler Blade, vi. Furrow Opener, vii. Ridger, viii. Peddler	306
9	Sowing and Planting Equipment	i. Paddy Planter ii. Seed Cum Fertilizer Drill iii. Raised Bed Planter iv. Planter v. Equipment for Raising Paddy Nursery vi. Seed Treating Drum	306
10	Harvesting & Threshing Equipment	i. Thresher ii. Winnowing Fan iii. Maize Sheller iv. Feed Block Machine	306
11	Post Hole Digger/Augur	i. Simple and non-mechanical equipment	306
Other Equipment			
12	Manual Knapsack Sprayer	i. Foot Operated Sprayer	612
13	Powered Knapsack Sprayer/Power Operated Taiwan Sprayer	i. Capacity 8-12 lts	612
14		i. Capacity 12-16 lts	612
15		i. Capacity above 16 lts	306
16	Eco Friendly Light Trap	i. Sub-project having CCA <25 ha (109 nos.)	109
17		i. Sub-projects having CCA >25 ha (197 nos.)	394

Following are some of the practices for long-term operation and maintenance of farm machineries-

Testing-

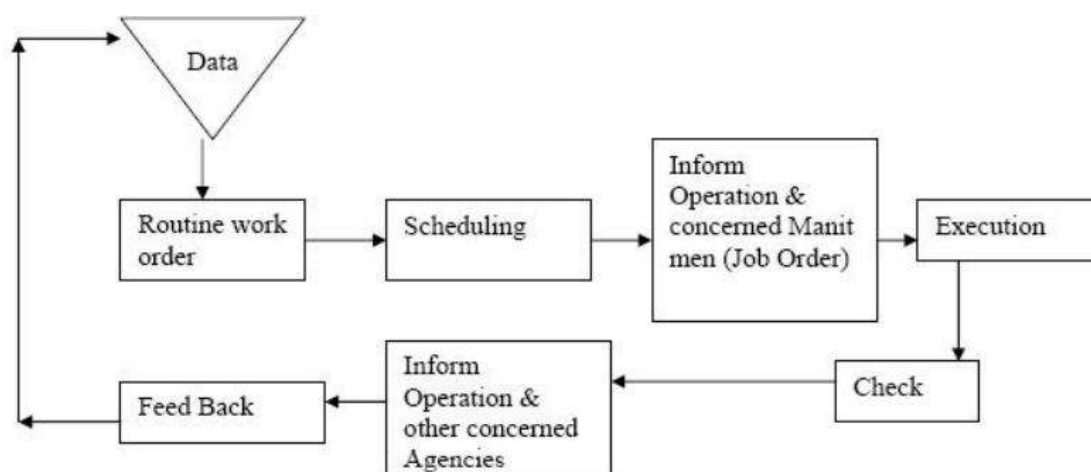
The Testing of farm machinery is essential with a view to assess their functional performance, suitability under varying field conditions. The major equipment like tractors, power tillers, self-

propelled combine harvesters, power operated equipment, irrigation, plant-protection equipment etc. are being tested by govt. Organizations like Northern Region Farm Machinery Training and Testing Institute (FMTTI) situated at Budni and Hissar on regular basis. Application for test of farm machinery/equipment can be made by the KVAs through BPMs. All such machinery be procured only from Govt. approval manufacture with warantee.

Routine Maintenance-

This should be done by KVA members on regular basis from the fund collected against machinery hiring charges from the farmers.

Routine Maintenance Routine maintenance is the simplest form of planned maintenance but very essential. It involves periodic check of relevant areas. The frequency of such checks ranges between hourly, daily, weekly and monthly or as recommend by the manufacturers. Routine maintenance reduces fuel bills and extends equipment life. Readings obtained from such checks could be collated in a maintenance record over a long period to give a behaviour history of the equipment. Examples are washing and cleaning, filing of distributor cap, change of oil, topping of battery electrolyte, lubrication, inspection and minor adjustments of pressure, flow, tightness etc.



Routine maintenance reduces fuel bills and extends equipment life. Good maintenance practices are essential for efficient operation of all types of farm machinery. Effort spent in this area of farm management is more than repaid by consistent, reliable operation of machinery, reduced fuel bills and extended equipment life. Maintenance of farm machinery is complicated by the usage pattern of short spells of intense activity, followed by periods of non-use or storage. During the “standing” or non-use periods chemical interactions between metals and fluids can cause more damage than normal wear and tear from active usage. This must be considered in planning machinery maintenance and the following suggestions are worthy of consideration.

1. Follow manufacturers’ instructions for all settings, adjustments, maintenance instructions, operating requirements and long term storage.
2. Follow manufacturers’ recommendations on safety aspects of operation and repair. Maintain all safety equipment as installed or recommended by manufacturers.
3. Do not overload equipment, or operate at higher speeds than manufacturer recommends.
4. Do not add counterweights to equipment to increase load capacity unless authorized by manufacturer. Store equipment in clean and dry conditions.

5. Remove all vegetation such as grass, hay, crops and crop residue from equipment before storage periods. Decomposing vegetable matter causes corrosion to metal surfaces. This is particularly important where surfaces are polished from usage.
6. Keep all cutting edges sharp and clean. Sharp cutters require less power and reduce overall load on equipment. Cracked or damaged cutting edges are also easier to detect on clean equipment.
7. Replace these items at end of season rather than at season commencement.
8. Inspect machinery at end of season or harvest.
9. Repair and adjust as required. Carry out maintenance work without pressure between seasons.
10. Get warranty for all such machinery from the suppliers.

7.4.8 Management of Solar/Electric Fencing:

HPCDP-II has a target of providing 293.22km solar/ electric fencing to the farmers in the selected sub-projects. Management of the solar/electric fencing is given below-

Solar Electric Fence system requires very little maintenance, if following steps are taken up in proper time.

- ✓ Ensuring that solar electric fence is a complete electric fence system with all the correct accessories.
- ✓ Making sure that the Energizer I Control unit is protected from rain and housed inside a secured area.
- ✓ Cleaning the top surface of the solar panel regularly to remove accumulated dust if any.
- ✓ Ensuring that the solar panel mounting is proper in the North – South direction at an angle of 15 degree.
- ✓ During heavy storm and lightning, disconnecting the energizer from the fence. This will prevent severe damages to the energizer.
- ✓ Earthing is very important for good performance. Using good number of Super Earth Kits. Installation of the earth kit far from mains earthing.
- ✓ Checking for vegetation growths regularly and keeping the fence line clean.

Battery Maintenance:

- ✓ Ensuring that the terminals are clean. Using petroleum jelly periodically.
- ✓ The specific gravity of the battery should be maintained between 1150 - 1250.
- ✓ Adding distilled water to maintain the level of electrolyte in each cell of the battery.
- ✓ Keeping the battery in an upright position on a wooden plank.
- ✓ Never add acid to the battery.
- ✓ Ensuring that the initial charging of the battery is done properly. The battery should be kept unused for more than one month.
- ✓ The warranty period shall be as per DoA guidelines and after that their assets to be maintained by farmers.

7.4.9 Post Project Management of Community Assets: -

The assets created through Project funds at community level will be under the ownership of the community as agreed in the Memorandum of Understanding (MOU) signed between Project Authority and Community at onset of Project related developmental works in the selected

villages. So community should be sensitized for post-project sustainability and efficient utilization of the assets.

7.5 Management of Centre of excellence for vegetables and Centre for soil less cultivation/Hydroponics

The owner of this facility would be State Agriculture University (SAU). This facility will be utilized for Sales of quality seedlings, Demonstration on production of quality seedlings, Dissemination on skills on seedling production. The facility will be equipped with Hi-tech Green House (560 sqm.), Fan & Pad system, Shade Net House with covered area of 250 sqm and Solar PV Pump (2 HP). Along with these facilities will be developed for hydroponics. Trainings/Exposure Visits will be conducted for Project farmers in this centre and quality seedlings raised in this centre will also be distributed in Sub-Project areas.

O&M responsibility of this centre would be of the SAU for which funds shall be raised through sales of seedlings/trainings for which SAU to prepare business plan so as to make these units self-sustainable.

7.6 Management of Training Centres constructed under the Project-

5 nos. Training centres within a township of Hamirpur (two facilities), Palampur, Mandi, Solan and Una (Bangana) where DPMUs/BPMUs are located are being constructed under the HPCDP-II. These training centres have following infrastructure-

Meeting Hall, Rooms, Drawing/Dining area, Kitchen etc. alongwith some office space for project staff to replace hired accommodation. Sameti hostel shall be operated and maintained by SAMETI itself.

7.7 Management of the Training Centres for sustainable use-

For management of a building asset, condition assessment is performed through visual inspection by experts in specific building systems, e.g., architectural, structural, electrical, and mechanical. A condition assessment system is performed primarily to facilitate the ranking of all the components of all assets according to the amount of needed repair. The engineer, PMC/ BPMU shall inspect the critical items first and have the first priority at instance, while the Good condition can be delayed later. Then, it can easily prioritize the defect items to be repaired.

Among other factors affecting the condition of building are the level of maintenance and the type of neighborhood (residential, commercial, or industrial). Some of the factors are

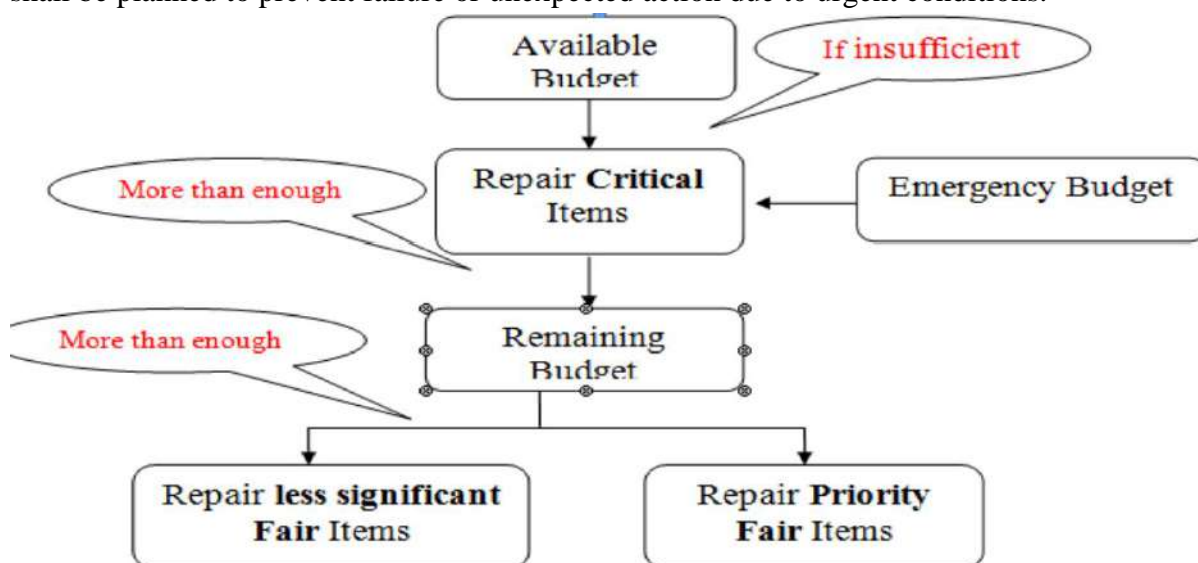
- ✓ Type of building
- ✓ Age or major year of renovation
- ✓ Size
- ✓ Geographical and external environment

Depending on the actual condition following steps should be taken-

- ✓ Calculation of cost for critical items.
- ✓ Calculation of cost for fair condition items that is must to be done at this year and cannot be delayed.
- ✓ Addition of yearly budget constraints.
- ✓ Comparison of the previous calculations of DOA

If the budget satisfy repair plan without addition, then the decision can be taken for to repair these items. If there is more budget and more items can be added then least priority items could be

added. If the required repair budget is more than available budget, then provision of more budget shall be planned to prevent failure or unexpected action due to urgent conditions.



The O&M of these centers shall be the responsibility of the project & of DoA after the Project as there will be handed over to the DoA after the project. The staff to run these centers shall be provided by the project through readjustment within the overall staff sanctioned. The training centres shall charge 15% operational charges over the annual training cost to be fixed by EC. The SCTC shall be operated and maintained by the project and shall be handed over to DoA after the project.

Repair Budget Allocation Strategy:

Finally, a life cycle cost considering the deterioration, least cost repair strategies, budget limits shall be calculated. This shall include optimum repair strategy for each year related budget.

7.8 Management of Assets created through Modernization of 13 Mandis under Himachal Pradesh State

Agriculture Marketing Board (HPSAMB).

13 mandis will be modernized by the Project. The detailed design for the works will be made in accordance with actual needs of each mandi after additional site surveys. PMU/HPSAMB shall manage all construction works including hiring local contractors. O&M responsibility of these Mandis would be of the HPSAMB as these assets belongs to them.

7.9 Guidelines for Asset Management in Office: -

The primary objective of this document is to ensure that the Organization's assets and resources are utilized in an efficient and cost-effective manner; strictly in accordance with the prescribed policies and procedures of the Organization; and, to avoid possible misuse, misappropriation and wastage.

7.9.1 Main Categories of Recorded Assets in offices:

The most common categories of fixed assets under the responsibility of office managers which generally require recording at Headquarters are:

- Transport equipment (vehicles, motorcycles, etc.)
- Computer equipment (including photocopying machines etc.)

- Some telecommunications equipment (telephone, fax machines)
- Air conditioning equipment
- Other assets, such as furniture and other office equipment

Staff members are responsible for the Organization's property in their custody and may be held liable for any financial loss incurred due to their negligence or their having violated any regulation, rule or administrative procedure.

7.9.1.1 Asset Management and Control Guidelines:

These guidelines are a quick reference guide to administrative functions i.e., Management, Control, Disposal and Reporting/Recording/Handing over.

7.9.2 Inventory Management:

7.9.2.1 Office Inventories:

An accurate record of all equipment and assets in the Project offices is to be maintained. Every item must be tagged with a local serial number and an asset number provided by Head of Office. At year end, the fixed assets register must be reviewed and submitted to Head of Office to ensure accuracy and completeness of the Organization's inventory.

Any new assets procured or received should be immediately tagged with a local serial number and asset number and added to the office inventory.

7.9.2.2 Project Inventories:

The Project Officers are also responsible for maintaining an inventory for all assets belonging to projects under their responsibility.

Ensuring proper use of official assets:

Assets should be used in strict accordance with the prescribed rules and regulations.

Maintenance and safekeeping of the assets:

Assets are to be maintained in a safe and efficient state, so as to ensure their prolonged use and readiness for use at all times.

Disposal:

Disposal of the equipment is arranged in accordance with prescribed rules of Himachal Pradesh (HPFR) Any request for disposal of fixed assets must be submitted using the available functionality.

The Head of Office is responsible to ensure that all data and software are removed from any storage media (e.g., PC hard disks, etc.) before it is disposed-off. For ongoing project, all non-project related data and software should be removed before the equipment is transferred or donated to Project Office.

Reporting:

Any change in the condition of the asset (loss, damage, etc.) should be reported to the Headquarters.

The sections below provide specific guidelines for the most common type of assets under the responsibility of Project Offices.

7.9.3 Management of Transport Equipment:

General Principles:

The general principles are followed:

- (i) Vehicles to be driven by authorized personnel only (normally office drivers) and used solely for official business;
- (ii) The use of Project vehicles for purposes not directly related to official activities should be on a limited basis and in exceptional situations and is authorized in advance by the Competent Authority.
- (iii) Only individuals connected with Project field activities travel in Project vehicles;
- (iv) The driver of a Project official vehicle should hold a valid driving license in the country of operation, has demonstrated the ability to drive safely in all traffic conditions, is physically and mentally fit to drive the vehicles and does not consume alcoholic beverages, other intoxicants or medicines affecting the nervous system immediately before or while driving;
- (v) Drivers undergo the required periodical medical examination to ascertain their general health and in particular their vision;
- (vi) A log-book is accurately maintained for each vehicle to record information on each journey. When not in use, vehicles are parked in the office compound unless otherwise authorized for certain officers allowed to work from another Head Quarter.
- (vii) All project vehicles are equipped with essential safety accessories like seat belts and fire extinguishers and other safety equipment in compliance with the State Security Policy, agreed Minimum Operating Security Standards (MOSS), Minimum Security Telecommunications Standards (MISTS), and Minimum Operating Residential Security Standards (MORS); and
Seat belts are used at all times.

In addition:

- Supplementary guidelines and controls to meet particular local conditions should be issued by the Project Authority;
- Drivers should be constantly reminded about their responsibilities and instructed to strictly adhere to local rules regarding speed limits and road safety, to take into account particular local conditions and to drive at a speed commensurate with maximum safety.

Accident and Insurance Matters:

- All vehicles in the Organization's inventory should be covered under the Insurance unless exempted by Govt. for Govt. vehicles.
- Any accident involving Project vehicles must be reported to the Project Director.
- For vehicles assigned to project other than vehicles hired by outsourcing the H.P. Government is responsible for settling all third-party claims as well as replacing or repairing damaged vehicles used for the project. If the Government cannot meet these responsibilities, then an appropriate insurance coverage must be locally arranged using project funds.

Maintenance:

The Project Authority is responsible for overseeing the operations and maintenance of all equipment, including vehicles. Drivers should be instructed to report any irregularity detected while driving the vehicle as well as to periodically verify the conditions of the tyres, the level of the brake fluid, the battery, etc.

Regular servicing and maintenance is essential to ensure the safety of the passengers, the efficiency of the vehicles and to make economies in the medium and long term. Although it may

seem expensive, regular servicing is always recommended since it prevents the occurrence of unexpected failures which may be very costly to fix.

1. Whenever possible, vehicles should be serviced and maintained by the manufacturer's accredited local agent or, in any case, by a specialized workshop.
2. Annual contracts for servicing and maintenance of the Project vehicle fleet may be entered into with a recognized workshop if considered beneficial to ensure good quality service at the most convenient price.
3. Records related to the servicing of vehicles must be appropriately maintained to enable checking on running costs and to reveal irregularities.

Control:

1. A '**vehicle log-book**' must be maintained for each vehicle and is carried in the vehicle at all times. The vehicle log-books should be reviewed at the end of each day by the responsible staff to ensure that they have been appropriately filled in by the driver.
2. Besides, the basic entries like date, time, mileage, etc., the log-book entries should include information on the journey made, its purpose and distance, intake of fuel oil, etc., and servicing and repairs, if any. The electronic vehicle log-book may be adopted to add up the running and maintenance costs related to the particular vehicle and make comparisons with those of other vehicles.
3. The Project authority should personally **carry out spot checks** and ensure that the Local Auditors review the log-books in their periodic review.
4. **Fuel coupons** should be handled by an authorized project official, who is required to maintain a register recording the entry, issuance and use of these coupons as well as ensure storage in a secure place.

Handing Over:

Handing over of a vehicle in post-project period:

The Vehicle should be handed over through the Property Transfer Form to DOA by making a note to file. The DOA Representative shall immediately notify the Procurement Service, giving all details (make, model, chassis/engine numbers, purchase references, asset number, etc.) concerning the vehicle(s) received in custody for proper recording/updating of data under the relevant inventory records, clearly indicating the symbol and title of project(s) handing over the vehicle(s) in question. The information may be updated each year by giving their present condition and utilization and making the necessary recommendations.

Reporting and Recording:

Details about the use of project vehicle must always be recorded in the vehicle log-book as well as a monthly log-book of petrol purchases maintained.

7.9.4 Management of Computer Equipment (Including Photocopying Machines)

Use:

Users are primarily responsible for the safety of all equipment in their custody and to ensure that it is used in accordance with established policies and procedures.

Control:

Computer equipment should be tagged with serial number and asset number and a local inventory of every asset indicating details such as the serial number, user location, state of the asset, etc., is to be maintained at all times. Along with the hardware, the data contained in the computers should

be protected with proper security systems. AMC may be entered with the suppliers for these equipments.

7.9.5 Management of Telecommunication Equipment (Telephone, Fax):

Use:

Telecommunication equipment is to be used in accordance with the manufacturer's user instructions.

Control:

Project Officials are responsible to ensure that there is responsible use of telephones and other telecommunication facilities, especially for personal use. A log-book for recording all long distance calls is to be maintained at all times. Telephone bills are to be checked by the responsible administrative staff and staff members are charged for any authorized personal usage.

As for other equipment, all telecommunication equipment must be serially tagged and a local inventory of same maintained at the Project office giving details such as tag number, user location, state of the equipment, etc.

7.9.6 Management of Air Conditioning Equipment:

Use:

The Project Officials are responsible to ensure that there is efficient use of the air conditioning facility. Manufacturer's user instructions should be followed at all times.

Maintenance:

Regular servicing and maintenance should be carried out by a local technician as required to ensure long-term efficient functionality of the asset. AMC may be done with the service providers authorized by manufacture.

Control:

The Project Officials should ensure that there is no wastage through unnecessary usage of the facility outside office hours or in the absence of conditions requiring its use. As for other equipment, all air conditioning equipment must be serially tagged and a local inventory of the same maintained giving details such as tag number, user location, state of the equipment, etc. It is essential to overall equipment monitoring that the assets records are kept up-to-date.

7.9.7 Management of Office Furniture & Other Equipment:

Use:

The Project Officials are responsible to ensure that office furniture and fixtures are used and kept in a satisfactory condition and there is no loss or damage caused by negligence or improper use.

Maintenance:

If applicable, regular maintenance and servicing must be carried out to ensure the prolonged life and serviceability of the asset.

Control:

Each piece of furniture or fixture must be serially tagged and a local master inventory is to be maintained giving details such as the tag number, user name and location, state of the asset, etc. Unserviceable furniture to be auctioned as per Govt. rules and sale proceed to be deposited in HPADS fund.

7.9.8 Management of Office Premises:

Use:

Proper maintenance and control over the premises is essential to ensure the safety and health of the most important asset of the Organization, i.e. its staffing as well as to ensure that the Organization's assets are properly stored and used, thereby avoiding losses or damages. The Project Officials are responsible to ensure that the office premises are fitted with the necessary safety equipment and maintained in compliance with agreed Minimum Operating Security Standards (MOSS), Minimum Security Telecommunications Standards (MISTS) and Minimum Operating Residential Security Standards (MORS). The building must be equipped with fire control system. The office buildings should be handed over to DoA after the project.

Maintenance:

If any repair or maintenance work is required to be carried out, the relevant Government or owner responsible for maintenance of the premises must be contacted immediately and the same should be got done. During the period of occupancy, necessary repair maintenance of buildings be got done by the project itself.

Control:

Access to Project premises must be limited to authorized personnel and the Project Official responsible should ensure that there is no unofficial or unauthorized use of the office premises.

Reporting and Recording:

Any changes in the status of the office premises must be reported to EC and necessary approvals obtained.

7.9.9 Management of Expendable Items:

Use:

As for all other assets, staff members are responsible to ensure that the Organization's property in their custody is properly used and maintained, in accordance with the guidelines set out. Any financial loss suffered as a result of negligence or of having violated any regulation, rule or administrative procedure should be recovered from the staff member responsible for the property.

Maintenance:

If required, regular maintenance and servicing must be carried out to ensure the prolonged life and serviceability of the asset.

Control:

Project Officials should ensure that there is responsible use of the Organization's property and there is no misuse, especially for personal use. As in the case of other equipment, all expendable items must be serially tagged and a local inventory of same maintained at the project office giving details such as tag number, user location, state of the equipment, etc.

Reporting and Recording:

It is essential to keep the assets/records up-to-date. Lost, stolen or unserviceable equipment should be reported to PD. In case of theft, FIR should be lodged with the police immediately, without loss of any time. Lost, damaged or unserviceable items must be disposed of immediately and duly updated in the local inventory.

Writing off of unserviceable and obsolete store articles: -

The store articles declared unserviceable and which cannot be repaired will be disposed off and written off from the stock register. Following the procedure as prescribed under HPRR-2009 as per powers to work off delegated by the H.P. Government vide notification No. Fin(C)A(3)-4/99- dated 20TH September 2014

Record Management:

The office record of the project will be maintained as per H.P. office manual 2011.

Weeding of old record:

The office record which has completed minimum retention period will be weeded out as per procedure prescribed in the H.P. office manual.

Reduce e-waste:

The project will resort to “Buy back mechanism” while procuring new hardware so that old/absolute hardware does not dumped in the stores. The PMU will ensure that procurement of new hardware conditional to buy back of the absolute equipments. The hardware will be procured only as per requirement of application software to be used. The procurement of excess hardware must be avoided by designing a network to share the hardware.

E-office System:

Order to create less paper environment in Government offices and to bring transparency, efficiency in office working the e-office has been implemented in various Government Department. E-office is contributing towards Environment conservation and sustainable development. The PMU has also derived to implement the e-office system in the HPCDP project from 2022-23.

Maintenance of Computer Hardware:

			Complaint booking		Attended	Repaired		Downtime Remarks (Excluded Holidays)
Sr.	Item	Date & Time	Date & Time	Complaint No.	Date & Time	Date & Time	Sign of Engineer	

Register of Hardware:

Item Name			Date of AMC			
Running No.	Sr. No. No. of Part	Brief Description	Source of Purchase & name of vendor	Date of Purchase	Cost	Remarks

Register of Software:

Sr. No.	Software Name	Mode of Acquisition/Purchase	Installation /Date of Operation	Loaded on Computers	User Manual Available	Remarks

Register of Consumables:

Item Name _____									
Receipt					Issue				
Sr. No.	Date	Qty	Source	Cost	Sr. No.	Date	Qty	Issued to	Remarks

Handing Over:

The equipment should be handed over through the Property Transfer Form to DOA by making a note in the file. The DOA Representative shall immediately notify the Procurement Service, giving all details (make, model, purchase references, asset number, etc.) concerning the equipment received in custody for proper recording/updating of data under the relevant inventory records, clearly indicating the symbol and title of project(s) handing over the equipment in question. The information may be updated each year by giving their present condition and utilization and making the necessary recommendations.

Unserviceable or unusable equipment may be disposed after appropriate certification by a local technician. All data and software must be removed from any storage media like PC, hard disks, etc., before it is disposed. The revenue earned by auction of unserviceable items shall be deposited in society fund.

8. SOCIAL AND ENVIRONMENTAL SAFEGUARDS

8.1 Introduction:

HPCDP-II is categorized as category ‘B’ Project by JICA as far as environmental categorization is concerned. (As per the JICA Guidelines 2010). Hence, during the course of development and implementation of different sub-projects under HPCDP-II, the PMU shall comply with environmental and social management principles and guidelines for addressing environment and social impacts due to the implementation of the Project in the target areas of twelve districts of Himachal Pradesh.

Key objectives of ‘Environment and Social Management (ESM)’ are:

- Provide integration of social and environmental aspects at all stages of project planning, design, execution and operation;
- Ensure positive social and environmental impacts and avoid/minimize any potential adverse impacts. The environmental and social safeguards shall be applied to all sub-projects to be taken up under HPCDP-II. The PMU shall ensure that the projects meet the national and state level environmental and social safeguards/policies and are also consistent with the applicable safeguard policies and provisions of JICA.

8.2 Requirements as per JICA Guidelines:

As per the JICA guidelines, the following conditions are examined with respect to the project implementation. Financial intermediary or the executing agencies are mandated to comply with the following requirements:

- a) Ensure appropriate environmental and social considerations,
- b) Sufficiency of institutional capacity to confirm environmental and social considerations of the financial intermediary/ executing agency is sufficient; if required, adequate measures be taken to strengthen the capacity,
- c) Financial intermediary or executing agency to assess potential positive and negative environmental impacts of sub-projects, takes appropriate measures to avoid, minimize, mitigate, or compensate for potential negative impacts, and promote positive impacts if any available,
- d) Disclosure of the results of environmental reviews on its website after concluding agreement documents, and

Confirm with project proponents on the results of monitoring items that have significant environmental impacts. Project proponents are undertaking environmental and social considerations for projects that fall under Categories A, B, and FI.

Category B sub-projects should follow the Environmental Monitoring Programme (EMoP). Such sub-projects information on the environmental and social impacts should be disclosed to all relevant stakeholders. SPMU shall prepare annual report of the Project in which ESC relevant report will be incorporated as one chapter/section.

8.3 Application of Environment and Social Management (ESM):

ESM shall be applied to all stages of the HPCDP-II. Sub-projects triggering significant environmental/ social impacts, i.e. sub-projects with potential to trigger impacts on environmentally sensitive areas, or large scale social affectation are not envisaged under HPCDP-II. However, in the event of such sub-projects, being critical to HPCDP-II priorities, the sub-projects shall be included after undertaking the necessary environmental and social assessments,

as mandated by Government of India, the State Government and conforming to the safeguard policies of JICA.

8.4 Environmental and Social Management Measures and Monitoring:

8.4.1 Preparation of Environmental Management Plan:

Environmental Management Plan (EMP) shall consist and cover environmental mitigations and consideration measures which shall be taken-up during construction and operation phases, which shall examine description and assessment results of environmental, social, health and safety impacts. EMP shall be prepared only for “Category B” sub-projects. Indicative EMP is described in **Table 8.1**. Any additional costs for the proposed mitigation measures shall be included in the construction cost.

Table 8.1: Indicative Environmental Management Plan

Potential Environmental Impact	Proposed Mitigation Measures	Responsibility
Pre-construction Phase		
Land Acquisition	<ul style="list-style-type: none"> ➤ Ensure that the forest land is not under the project ➤ CCA is more than 5 ha. (for minor irrigation sub-projects) ➤ In case any selected sub-project entails acquisition of the private land, it should be confirmed that the land surrendered for the use of project should be no more than 10% of the total holding of the owner ➤ Verification of the voluntary nature of land donation (e.g. affidavit or witnessed statements must be obtained in the PMU, so that any concerns or claims could be voiced and solved in a neutral and transparent manner. 	Contractor/DPM U
Shifting of utilities and relocation of cultural and religious properties	<ul style="list-style-type: none"> ➤ There may be some utility services such as electric lines, telephone line, cable line, pipeline etc. need to bring in notice of Project Engineer and which may be shifted on consultation with the concerned departments. ➤ Religious structures in case they are required to be shifted, should be shifted only after public consensus and after obtaining SPMU's approval. Relocation should be completed before construction work is taken up. 	Contractor/DPM U
Archaeological structure/article	<ul style="list-style-type: none"> ➤ There is no Archaeological structure affected, directly or indirectly, in the sub-project. however, such structure/articles found nearby during construction stage shall be brought to the notice of Project Engineer 	Contractor/DPM U
Ecological Park/Sanctuaries etc.	<ul style="list-style-type: none"> ➤ There is no ecological sensitive area affected, directly or indirectly, in the sub-project. However, such zones found nearby during construction stage, shall be brought to the notice of project engineer. 	Construction Contractor/DPM U
Construction Phase		
Air quality	<ul style="list-style-type: none"> ➤ Adequate dust suppression measures such as regular water sprinkling on construction sites, haul & unpaved roads particularly near habitations must be undertaken to control fugitive dust. ➤ Plantation activity may be undertaken at the construction sites. ➤ Workers may be provided with masks to prevent breathing problems. ➤ Trucks carrying soil, sand and stone may be duly covered to avoid spilling. ➤ Low emission construction equipment, vehicles and generator sets may be used. 	Contractor

	<ul style="list-style-type: none"> ➤ Plants, machinery and equipment should be handled so as to minimize the generation of dust. ➤ All crushers used in construction should confirm to relative dust emission devices. ➤ All vehicles shall have pollution certificate. ➤ Air quality monitoring may be conducted at construction sites. 	
Water quality	<ul style="list-style-type: none"> ➤ Site fencing may be provided near water bodies to avoid spillage of construction material. ➤ Discharge of waste from construction/labour camp into water bodies may be strictly prohibited. ➤ Construction methodologies with minimum or no impact on water quality may be adopted, disposal of construction wastes at designated sites and adequate drainage system may be provided. ➤ Project design may take care of irrigational canal and proper culverts may be provided, so that irrigation setup is not disturbed. ➤ Construction activity may be prohibited during monsoon. ➤ Ponds nearer to work site with the habitat of birds etc. shall be protected. Poaching must be strictly banned. 	Contractor
Soil quality/ sedimentation	<ul style="list-style-type: none"> ➤ Asphalt emulsifier must be handled with caution and any leakage detected must be immediately rectified. ➤ Construction work should not be done during rainy season to avoid erosion and spreading of loose material. ➤ Top-soil removed during excavation work should be utilized, stored separately in bunded areas and should be utilised during planation or refilling of excavated area. 	Contractor
Solid waste	<ul style="list-style-type: none"> ➤ Construction work must be carried in such a way that minimum or no solid waste is generated at construction site. ➤ Extra earth material produced may be utilized for refilling of borrow areas. ➤ Rainy season may be avoided to minimize spreading of loose materials. ➤ Solid waste management may be framed for camps. ➤ Proper sanitation facilities must be provided in camp by the contractor. 	Contractor
Noise & vibration	<ul style="list-style-type: none"> ➤ Modern technologies producing low noise may be used during construction. ➤ Construction equipment's and vehicles must be in good working condition, properly lubricated and maintained to keep noise with permissible limits. ➤ Temporary noise barriers are installed at settlements and nearby forest area, if required. ➤ Head phones, ear plugs to be provided to the workers at construction site. ➤ Noise level monitoring must conduct during construction phase. ➤ All vehicles, equipment and machinery used in construction should be fitted with exhaust silencers. ➤ Equipment should be maintained regularly and sound-proof gadgets should be used. ➤ Provision of ear-plugs to heavy machinery operators. 	Contractor
Land subsidence	<ul style="list-style-type: none"> ➤ Plantation must be carried to control erosion. 	Contractor
Bottom sediment	<ul style="list-style-type: none"> ➤ Silt fencing may be provided to avoid runoff into the river. ➤ Construction activity should be taken in dry season to avoid spreading of construction material and minimize impact on water quality. 	Contractor
Applicability of legislations and statutory requirement	<ul style="list-style-type: none"> ➤ All the construction works shall be undertaken in accordance with all applicable legislations and Indian statutory requirements. 	Contractor
Removal of trees. Vegetation	<ul style="list-style-type: none"> ➤ Permission for cutting of individual trees shall be taken. ➤ Vegetation removed shall be properly disposed. 	Contractor

Soil	<ul style="list-style-type: none"> ➤ Suitable protection measure consisting of bio-engineering techniques such as plantation of grasses and shrubs & check dams, may be provided to control erosion. ➤ Borrow areas ('borrow area' means the area from which material is excavated to be used as fill material in another area) may be finalized in accordance with ecological sensitivity of the area. ➤ Agriculture land may not be used as borrow area. Priority may be given to degraded area for excavation of borrow material. ➤ Rehabilitation of borrow area may be taken under the project. ➤ Construction work may be avoided during rainy season to evade erosion and spreading of loose material. ➤ Top-soil removed from agricultural land may be stored separately in bunded areas and utilized during plantation or refilling of excavated area. 	Contractor
Water	<ul style="list-style-type: none"> ➤ Availability of water ➤ Water used for construction activity shall be predefined and if ground water is to be used, we shall follow Central Ground Water Board/Allied Department norms. ➤ Provision of temporary drainage arrangement due to construction activities must be made by contractor with proper approval of project engineer. 	Contractor
Construction/labour camp management	<ul style="list-style-type: none"> ➤ Silt fencing may be used near water bodies to avoid run-off into water bodies. ➤ Proper cross drainage structure may be planned at the crossing of the canal in consultation with project engineer/irrigation department. ➤ Proper drainage shall be planned in the area to avoid water logging. ➤ During the construction phase, the construction / labour camp will be located along the project area. ➤ A proper construction camp has to be formulated to control degradation of the surrounding landscape due to the location of the proposed construction camp. The contractor must provide, construct and maintain necessary living condition and ancillary facilities. These must be included in contract documents provided to the contractor. ➤ Sufficient supply of potable water must be provided at camps and working sites. ➤ Adequate sanitary facilities may be provided within camp. The place must be cleaned daily and maintain strict sanitary conditions. Separate wash rooms/rest rooms must be provided for women. ➤ Adequate supply of water must also be provided. ➤ The contractor must ensure that there is proper drainage system to avoid creation of stagnant water bodies. ➤ At every camp, first aid facilities with suitable transport must be provided to take injured or ill person to the nearest hospital. ➤ Adequate supply of fuel in the form of kerosene or LPG may be provided to construction labourers, to avoid felling of trees for cooking and other household activities. No open fires may be allowed in camps. ➤ The site should be secured by fencing and proper lighting. ➤ The contractor may ensure that all construction equipment and vehicle/machinery may be stored at a separate place/yard. Fuel storage and refilling areas may be located 500 m away from the water bodies and from other cross drainage structures. ➤ All the construction workers should be provided with proper training to handle potential occupation hazards and on safety and health which include the following: <ul style="list-style-type: none"> • Environmental awareness programme • Medical surveillance 	Contractor

	<ul style="list-style-type: none"> • Engineering controls, work practices and protective equipment • Handling of raw and processed material • Emergency response <ul style="list-style-type: none"> ➤ Construction/labour camps may be located away from forest areas, settlements, cultural heritage and historical sites and water bodies and dry river beds. ➤ It should be ensured by the contractor that the camp area is cleared of the debris and other wastes after the completing of construction. ➤ First-aid-box shall be readily made available at the site and a trained person shall always be available during construction time. ➤ On completion of construction, the land should be restored back to its original form. 	
Public health and safety	<ul style="list-style-type: none"> ➤ Full height fence, barriers, barricades etc. shall be erected around the site in order to prevent the surrounding area from excavated soil, rubbish etc. which may cause inconvenience to workers and endanger the public. Follow all technical specifications mentioned under Bid document. The contractor must supply safety goggles, helmets, earplugs and masks etc. to the workers and staff. ➤ Adequate precaution must be taken to prevent danger from electrical equipment. Necessary light and fencing must be provided to protect the public. ➤ All machines and equipment used for construction purposes must conform to relevant Indian Standards (IS) codes. This equipment must be free from patent defects, in good working condition, regularly inspected, and properly maintained as per IS provisions. ➤ All labourers working on mixing of asphaltic material, cement, lime mortars, concrete etc. should be provided with protective footwear and protective goggles. Workers involved in welding work should be provided with welder's protective eye shields. ➤ No men below the age of 18 years or women of any age will be employed to work with paint products containing lead in any form. Face masks must be supplied to workers when they use any form of spray paint or work with surface that have been dry rubbed and scrapped with lead paint. ➤ All reasonable measures must be taken to prevent any damage to the public from fire, floods, etc. ➤ All necessary steps must be taken to prompt first aid treatment for injuries that may be sustained during the course of work. ➤ The contractor must conform to all anti-material instructions, including filling up of borrow pits. ➤ Take all Covid-19 protocol. ➤ Work that affects the use of side roads and existing accesses must not be taken up without providing adequate provision. ➤ On completion of the works, all the temporary structures may be dismantled, all rubbish disposed-off, excreta and disposal pits or trenches filled-in and effectively sealed off and the entire site left clean and tidy. ➤ No parking of trucks, trolleys, cranes, and trailers etc. shall be allowed on road which may obstruct the traffic movement. 	Contractor
Emergency preparedness plan	<ul style="list-style-type: none"> ➤ The contractor shall prepare as required under rule 39 of building and other construction workers registration (BOCWR) and emergency response plan for all work site. This includes; ➤ Fire and explosion ➤ Collapse of lifting appliances and transport equipment ➤ Collapse of building sheds or structure etc. ➤ Gas leakage or spillage of dangerous goods or chemicals 	Contractor

	<ul style="list-style-type: none"> ➤ Drowning of workers ➤ Landslides getting workers buried, flood, earthquake, storm etc. 	
Accident reporting	<ul style="list-style-type: none"> ➤ All accident and dangerous occurrence shall be immediately informed verbally to the project engineer. ➤ Reports of all accidents (fatal/injury) and dangerous occurrence shall be sent within 24 hrs. 	Contractor
Operation Phase		
Air quality	<ul style="list-style-type: none"> ➤ AAQ monitoring at all sites is recommended under the guidance of SPCB. 	DoA/Contractor
Water quality	<ul style="list-style-type: none"> ➤ Judicious use of chemical fertilizers, insecticide/pesticides is managed. ➤ Use of bio-fertilizers and insecticides/pesticides is introduced ➤ Under farmers support program, the project is promoting the following <ol style="list-style-type: none"> i. Promotion of organic farming ii. Promotion of optimum use of pesticides under 'Integrated Pest Management' (IPM) and 'Biological Control of Pest and Diseases', iii. Promotion of farming practices to reduce soil erosion, iv. Promotion of optimum quantities of farm inputs such as seeds and fertilizers. ➤ Water quality monitoring at all irrigation sites is recommended under the guidance of SPCB. 	DoA/Contractor /KVA

8.4.2 Preparation of Environmental Monitoring Plan:

Environmental Monitoring Plan (EMoP) provides monitoring plan to administer and scrutinize the implementation of proposed environmental mitigation measures and considerations and to regularly monitor the quality of surrounding environments during construction, and operation phases. Same as EMP, EMoP shall be prepared only for “Category B” sub-projects.

EMoP ensures that environmental and social safeguards adopted measures are bringing the desired results. Therefore, indicators of environmental and social considerations are utilized to measure the quality environmental parameters and safeguard processes. **Table 8.2** presents indicative monitoring items, their indicators, and means of verification, frequency and responsible parties for measuring safeguards measures that have been implemented. However, these aspects need to be finalized in relation to EMP, in case, EMP are prepared for some specific sub-projects.

It shall be the responsibility of the designated DPM to implement, monitor, and report safeguards, as an integral part of the project implementation, and for the purpose of site-level planning and implementation, the designated DPMU officers ensure the required monitoring activities are conducted. The compliance of environmental and social safeguards during implementation of sub-projects must be also closely observed by BPMUs, and relevant local stakeholders such as FPOs, representatives of the KVAs, local NGOs, if any appointed, women's groups, youth groups, etc. Periodic visits should also be carried out by the designated officers to confirm that mitigation measures for deleterious impacts are being carried out properly by the contractors.

Table 8.2: Indicative Environmental Monitoring Programme

Aspects	Parameters to be monitored	Locations	Method	Frequency	Responsibility
Pre-Construction Phase					
Land acquisition	Land donation ratio and verification	Sub- project areas	Interview	Once in a month	DPMU, Environment Safeguards Officer/ Contractor
Shifting of utilities	Shifting of utilities	Sub- project areas	Interview	Once in a month	DPMU, Environment Safeguards Officer/ Contractor
Construction Phase					
Air pollution	Dust, smoke	Sub- project areas	Site visits visual checks	Twice a week	DPMU, Environment Safeguards Officer/ Contractor
Noise and Vibrations	Noise of equipment, complaints from local residents	Sub- project areas - Major sources of noise	Sound Level Meter	Once in three months	DPMU, Environment Safeguards Officer/ Contractor
Ground water quality and Surface water quality * Whenever the Environmental Expert or other Monitoring Officers feel the necessity for carrying Out tests during construction. Otherwise, site visits and visual checks only	pH, Electrical conductivity, Turbidity, TDS, TSS, Total Hardness, Alkalinity, Carbonate, BOD, COD, TN, TP, Fluorides, Chlorides, Sulphates, Sodium, Potassium, Calcium, Magnesium, Oil & Grease, Iron, Manganese, Copper, Zinc, Phenolic Compounds, Colour, Cadmium, Chromium, Cyanides, Lead, Total Coliform,	Sub- project areas and nearest villages -10 location	Collected sample to be analyzed from DoA Laboratory Or Site visits, visual checks	Once in three months	DPMU, Environment Safeguards Officer/ Contractor

	Pesticides (to be specified)				
Solid waste (Waste)	Volume and kind of construction wastes,	Sub- project areas	Site visits and visual checks	Once in three months	DPMU, Environment Safeguards Officer/ Contractor
	Kitchen and other solid waste generated in labour camp	Sub- project areas	Site visits and visual checks	Once every month	DPMU, Environment Safeguards Officer/ Contractor
Chemical or hazardous wastes	Oils, lubricants, cleaning agents, etc.	Sub- project areas	Site visits and visual checks	Once in three months	DPMU, Environment Safeguards Officer/ Contractor
Subsidence & sedimentation		Sub- project areas	Site visits and visual checks	Once in three months	DPMU, Environment Safeguards Officer/ Contractor
Soil erosion	Visual inspection of rain water run-off	Sub- project areas	Site visits and visual checks	Twice in a Year	DPMU, Environment Safeguards Officer/ Contractor
Disturbance to ecological resources and vegetative cover	Illegal tree felling, wildlife hunting, illegal extraction of forest resources	Sub- project areas	Site visits and visual checks	Twice in a Year	DPMU, Environment Safeguards Officer/ Contractor
Interactions with local communities	Complaints and grievances from local residents	Sub- project areas	Site visits and visual checks	Once in two months	DPMU, Environment Safeguards Officer/ Contractor
Land acquisition (loss of income or loss of access)	Economic condition of households, process of selection of project areas	Sub- project areas	Interviews	Twice in A Year	DPMU, Environment Safeguards Officer/ Contractor
Grievance mechanism	Grievance condition redress	Sub- project areas	Interviews	Twice in A Year	DPMU, Environment Safeguards Officer/ Contractor

Impact of livelihoods	Direct or impacts of livelihoods Indirect	Sub- project areas	Interviews	Twice in a Year	DPMU, Environment Safeguards Officer/ Contractor
Health and Safety	Training and healthcheck-ups for workers, fencing Warning signs, emergency evacuation	Sub- project areas	Site visits and visual checks	Twice in a Year	DPMU, Environment Safeguards Officer/ Contractor
Accidents and management traffic	Signage, maintenance regular	Sub- project areas	Site visits and visual checks, record of accidents and training	Twice in a Year	DPMU, Environment Safeguards Officer/ Contractor
Operation Phase					
Ground water quality	pH, Electrical conductivity, Turbidity, TDS, TSS, Total Hardness, Alkalinity, Carbonate, BOD, COD, TN, TP, Total Coliform, Pesticides	Sub- project areas and nearest villages -10 location	Collected sample to be analyzed from DoA Laboratory	Once in six months	DoT, Environment Safeguards Officer/ Contractor
Surface water quality					
Ground water level	Water level of existing well nearby	Sub- project areas	Measurement	Once in three months	Contractor/KVA
Impact of livelihoods	Direct or impacts of livelihoods	Sub- project areas	Interviews	Twice in a Year	DoT, Social Safeguards Officer/ Contractor
Accidents	Direct or impacts of livelihoods	Sub- project areas	Site visits and visual checks, record of accidents and training	Twice in a Year	DoT, Environment Safeguards Officer/ Contractor
Grievance mechanism	Grievance condition redress	Sub- project areas	Interviews	Twice in a Year	DoT, Environment Safeguards Officer/ Contractor

8.4.3 Implementation and Monitoring of Sub-projects:

The institutional arrangement for the implementation and monitoring system for EMP and EMoP is basically same as the project component monitoring system, but again it should be noted that only the sub-projects which are identified as Category 'B' as per JICA Guideline shall be the target of this monitoring. A sample monitoring format at this level is Attachment III. BPMU officer

shall compile monitoring results and reviews regularly, thereafter; DPMU shall compile and report to SPMU, which analyses the result and share to concerned departments in the State government as well as annual report to JICA. A specialist under PMC, and subject matter experts, identified in **Section 7.1** below shall support SPMU/ DPMUs/ BPMUs for the monitoring related activities which are in line with JICA Guideline.

- 1) Category-wise main check items of environmental items Confirmation of Environmental Considerations (Reasons, Mitigation Measures) given at attachment-11 of MOD
- 2) Checklist for ESMS of Executing Agency given at attachment-12 of MOD
- 3) Potential Deleterious Environmental & Social Impacts Attachment-13 of MOD

8.5 Institutional Arrangement and Capacity Development for ESAF:

8.5.1 Institutional Arrangement:

In the proposed Project, most of the environment and social issues and protection are managed through the institutions responsible for agriculture management i.e. HPADS, is responsible for overall planned intervention in the proposed Project, legal/policy development, ensuring adequate consultation and participation, inclusion of vulnerable people such as STs, poor/ women headed households, in planning and implementation and the equitable distribution of benefits associated with site-level project interventions. Other agencies would also be involved in different environment and social safeguard aspects or issues. The district administration is the designated agency responsible for land administration, land acquisition and disbursement of compensation and providing Resettlement and Rehabilitation (R&R) benefits to the project-affected families. ESAF will be implemented through the institutional structure of the Project and a Director/ officers at each administrative level shall be appointed as focal persons for ESAF compliance. **Table 8.3** highlights the institutional structure for ESAF with key environmental and social management roles and responsibilities.

Table 8.3: Institutional Structure for ESAF Implementation and Monitoring

Institution	Role in the Project	(Additional) Role and/or Responsibility in ESAF
Executing Committee	<ul style="list-style-type: none"> - Highest decision-making body - Lay-down the broad policy framework for functioning of HPAD Society - Review the Society's performance - All administrative and financial powers - Monitor utilization of funds 	<ul style="list-style-type: none"> - Overall supervision on ESAF and its implementation and M&E. - Facilitation and coordination with various line departments and other agencies. - Provide directions/advice to SPMU to ensure smooth/efficient project operation on environment and social consideration. - Periodical checks and due diligence on safeguards reports, monitoring data etc.

State Project Management Unit (SPMU)	<ul style="list-style-type: none"> - Project implementation, supervision and monitoring of all activities. - Documentation and reporting - Monitoring of project activities at state level 	<ul style="list-style-type: none"> - Owner and implementation of ESAF - Report to concerned departments in the state government as well as to JICA in relation to environmental and social consideration - Information disclosure through project information brochures and project homepage, etc. - Consultation and guidance to DPMU/BPMU, and field level officers on information disclosure and consultation. - Ensure FPIC consultation. - Technical guidelines on beneficiary selection safeguard checks/ guidelines for particular activities (if required). - Development of planning/ monitoring forms, review of monitoring data, reporting, assistance with evaluations - Finalize criteria for categorization (Category B or C) as per JICA Guidelines as well as exclusion criteria - Review of participatory Environmental and Social Assessments. - Performance of due diligence follow-up. - Guide, instruct, prepare guidelines, establish and operate M&E, dissemination of project information, hand-holding. - Support in the field for all project activities.
Project Management Consultants (PMC)	<ul style="list-style-type: none"> - support and facilitate the SPMU for project implementation, and would extend all technical inputs and guidance to DoA at requirement basis and through regular review meetings frequency of which to be determined during the preparatory phase of the Project - ? would not form the part of the society 	<ul style="list-style-type: none"> - Coordinate, monitor and supervise the ESC relevant activities, including the screening and selection of sub-projects and determination of the required procedures for specific sub-projects following the guidance/instruction of SPMU, - Liaise with other line-departments at the appropriate level, for inter-sector convergence - Provided any specific support required for implementation and monitoring of the Project
District Project Management Unit (DPMU)	<ul style="list-style-type: none"> - Function as the dedicated and extended wing of the SPMU for project implementation at division level and as a subordinate office of the autonomous society. - facilitate project implementation at district level, and would extend all technical inputs and guidance 	<ul style="list-style-type: none"> - Coordinate, monitor and supervise the ESC relevant activities at division level, - Conduct the screening and selection of sub-projects and determine the required procedures for specific sub-projects following the guidance/instruction of SPMU, - Liaise with other line departments at the appropriate level, for inter-sectoral convergence.

	<ul style="list-style-type: none"> - to the BPMUs - Monitoring of project activities at District level 	<ul style="list-style-type: none"> - Provided any specific support required for implementation and monitoring of the Project - Coordinate with subject matter experts.
Block Project Management Unit (BPMU)	<ul style="list-style-type: none"> - facilitate project implementation at the field level, and would extend all technical inputs and guidance at field level on day-to-day basis - Monitoring of project activities at Block level 	<ul style="list-style-type: none"> - Coordinate with field-level implementing organization to select sub-projects with screening procedures and to conduct participatory Environmental and Social Assessments - Support field-level implementing organization with monitoring and reporting, logistical support for independent evaluations. - Regularly undertake site visits at construction areas to ensure compliance of ESAF.
Village Level		
KVA	<ul style="list-style-type: none"> - Assist in selecting target beneficiaries - Clarify local needs and expectations on the Project - Self-monitoring of project activities at village level in consultation with officials of BPMU/ DPMU 	<ul style="list-style-type: none"> - Conceive and raise awareness in the locality on environmental and social considerations. - Provision of support in micro planning activities. - Participating in Environmental and Social Assessments

The State Project Management Unit (SPMU) headed by the Project Director shall be responsible for project administration, programme management, procurement, financial management, supervision of field units, project implementation, monitoring and evaluation, and providing direction and support to the Project. Thus, the overall responsibility of the implementation of ESAF shall be vested with SPMU. Under SPMU, one officer is required to be given responsibility to ensure implementation and monitoring and compliance of environment and social safeguards, and provide technical advice on environmental and social safeguard during the project implementation. And DPMU/ BPMU officers shall be responsible for ensuring implementation and monitoring of ESAF at field level with a support of KVAs and at district/block level respectively. In order to strengthen organization and institutionalize ESC within DOA, it is proposed to have two subject matter experts within SPMU under the APD (M&E) who will be well supported by one specialist in Project Management Consultant (PMC) for the compliance of the environmental and social safeguards and its smooth and efficient implementation such as environmental and social assessment, management and monitoring of the environmental and social aspects within the ambit of the Project. The details of the proposed positions are as follows:

◆ **Subject Matter Expert /Environmental Consideration Expert (ECE):**

ECE shall/ could be engaged as contract basis with SPMU from the initial Preparatory Phase of the Project. This is to assist the SPMU to head start with the safeguard related actions. Once the project implementation begins, ECE will report to the Director under

SPMU who would be vested with additional charge to ensure the compliance of ESC. ESCE will assist SPMU for the following aspects;

- a) To facilitate and coordinate with various implementation and line departments,
- b) To update and finalize ESAF (if required),
- c) To develop appropriate training materials on environmental and social safeguards, following the requirements in ESAF,
- d) To provide training courses and capacity enhancement at the different levels of stakeholders who will be designated with the responsibilities to ensure implementation of environment and social safeguards, and
- e) To supervise/ manage the project activities to ensure that the required procedures indicated in ESAF are followed properly. The expert may also be required to follow-up in the field where particular issues are identified and report to the specialist/ SPMU.
- f) To assist in monitoring the environmental aspects (if any) at regular interval

◆ **Subject Matter Expert/ Social Consideration Expert (SCE):**

SCE can also be engaged on contract basis with SPMU, and will assist ECE to provide the relevant trainings at respective administrative level such as preparation of the training materials, record minutes of meeting of the relevant consultation meeting, etc. SCE would also assist in smooth and effective implementation of public grievance and redressal mechanism under the project.

- ◆ **SPMC Member/ Environmental and Social Consideration/ Environmental Economics Specialist:** The specialist is planned to be deployed under the Project Management Consultant (PMC) to assist SPMU on ESC issues of the Project. He/she is expected to support SPMU to review the project activities with focus on the compliance on ESAF, provide guidance and technical advice to PMUs for required environment and social safeguard measures, as well as reporting to JICA to ensure smooth and efficient implementation of environment and social safeguard measures.

8.5.2 Capacity Development Programme:

In order to ensure effective implementation of the proposed ESAF and associated safeguards procedures under the above proposed institutional arrangement, it would be obligatory to enhance capacity of various agencies and stakeholders. In this regard, capacity development programmes, supported by the above proposed specialist/experts will not only help address gaps in the existing environmental and social management system, but would also ensure that environmental and social safeguards are effectively operationalized.

The details of the training programme such as venue, time, date, frequency of the proposed trainings sessions should be further developed by hired specialist/experts with comments and clearance of SPMU. An indicative capacity development programme has been devised and depicted in **Table 8.4** as a reference to devise capacity enhancement training programmes.

Table 8.4: Indicative Capacity Development Programme for Environmental and Social Safeguards

Item	Descriptions
Training 1	Programme for Management/ Administrative Level
Key Participants	Designated officials of SPMU
Training Programme	<p>Topic 1: General Orientation on ESAF for the Project</p> <ul style="list-style-type: none"> - Legal framework on environmental and social safeguard of India and JICA - Basic introductory concept of safeguard - Environmental and social impact assessment: overview & regulations - Safeguard issues (vulnerable groups, SCs, STs, etc.) - ESAF: steps and procedures with respect to the Project - FPIC <p>Topic 2: Monitoring and Evaluation for Environmental and Social Safeguard</p> <ul style="list-style-type: none"> - Concept of M&E - M&E and reporting procedures - Use of M&E results and feedback, including Grievance Redress Mechanism (GRM)
Duration	Two days training (once a year in the first four years at each district)
Training 2	Programme for Field/ Operational Level
Key Participants	<ul style="list-style-type: none"> - Designated officials and staff of DPMU and BPMU - Designated field level officers - (If necessary) representatives of FPOs and KVAs
Training Programme	<p>Topic 1: General Orientation on ESAF for the Project</p> <ul style="list-style-type: none"> - Basic introductory concept of safeguard - Environmental and social impact assessment: overview - ESAF: steps and procedures with respect to the Project - Environmental protection, EIA and social safeguard regulations (specific) - Safeguard issues (vulnerable groups, SCs, STs, etc.) - Process of community consultation and public participation - FPIC - PRA for data collection, analysis and report preparation - Micro-planning <p>Topic 2: Monitoring and Evaluation for Environmental and Social Safeguard</p> <ul style="list-style-type: none"> - Concept of M&E - M&E and reporting procedures - Use of M&E results and feedback, including GRM
Duration	Two days training (once a year in the first four years at each division)
	Farmers Facilitation and Environmental and Social Assessment for ESC
Training 3	Farmers Facilitation and Environmental and Social Assessment for ESC
Key Participants	<ul style="list-style-type: none"> - Designated field level officers - Representatives of FPOs and KVAs
Training Programme	<ul style="list-style-type: none"> - ESAF: steps and procedures with respect to the Project - Project activities planning (and micro planning) - Role of related organizations - Participatory ESA procedures - Working with vulnerable groups - Conflict resolution/ grievance procedures

Duration	One session as part of other community related trainings (Once a year in the first four years/ location and timing shall be determined accordingly)
Key Participants	To be defined according to the main topics
Training Programme	For example: <ul style="list-style-type: none"> - Appropriate chemical use - Environment health & safety standard for construction - Occupational health & safety - Mitigation planning and implementation
Duration	To be defined when necessary

8.6 Public Consultation Mechanism:

Public consultation and participation is an apt process to provide information to farmers, project-affected persons and other stakeholders relevant to the proposed Project, so that they (i) are sufficiently informed about the project's objectives, activities, benefits and risks; (ii) have equal opportunities to participate in the Project; (iii) receive culturally appropriate benefits which are more suited to their interests, capabilities and priorities; these shall be identified during the course prior consultations, and such benefits are shared equitably; (iv) are not adversely affected by the Project or its associated activities; adverse impacts shall be mitigated appropriately; and (v) can raise project related grievances and required mechanism is in place.

Consultation and Participation provides an opportunity and platform for people to express and sharing their views and concerns, contribute to design and implementation of the programme activities, discussions on sensitive social mitigation measures, while at the same time creating a sense of ownership for the Project. In this regard, FPIC is an important process to minimize any negative impacts. Summary of FPIC relevant activities are described in **Table 8.5**

Table 8.5: Summary of FPIC Activities

Item	Descriptions
Objective	To establish broad farmers' support and willingness for implementation of the Project
Topic or Consultation	<ul style="list-style-type: none"> - Disclosure of basic project related information including area, location, purpose/objectives, key activities, stakeholders involved, and target beneficiaries. - Expected role and involvement of communities. - An overview of anticipated environmental and social risks. - Involuntary Resettlement Plan and Vulnerable Scheduled Tribal Plan (if any)
Participants	<ul style="list-style-type: none"> - Relevant members of FPOs/ KVA/ SHG, etc. - Other important key persons (e.g. Sarpanch/ Head of the village)
Process:	<ol style="list-style-type: none"> Before on-set of sub-project implementation, immediately following formations of beneficiary groups, appropriate KVA meetings and consultations that are culturally appropriate and in simple and understandable language Encourage farmer's participation in discussions, meetings and consultations, facilitate participation of women, elders and other vulnerable groups Field level officers will participate in general KVA meeting to discuss concerns, visit individuals who express doubt and/or criticism on any aspect of project implementation. Participants to be provided adequate time to assimilate information provided/ shared Opportunity to decide if they do not wish to participate. Presentation and discussion with stakeholders well represented by all sections including small and marginal farmers, SC/ST, poor and disadvantaged.
Material Required	<ul style="list-style-type: none"> - Provision of simple/easy to read project brochures in local language. - Consultation and Participation Monitoring Sheets

The public consultation mechanism shall reduce conflicts between the stakeholders. This is particularly focused on ensuring that vulnerable groups, including the poor, landless, STs/SCs, and women, are properly consulted during site-level project planning and that they are given the opportunities and encourage participating in the Project.

8.7 Grievance Redress Mechanism:

While there are the existing legal frameworks related to the Grievance Redress Mechanism (GRM) in the country, a Project-level GRM which shall be applied all sub-projects is expected to be institutionalized, in which project-related grievances such as disputes over locations of infrastructure development, intended farmers' support, beneficiaries of value-chain and marketing development, distribution of project benefits, contractor and his workers, project-related staff or consultants, etc. can be reported directly to the project.

In this regard, KVA would be the first level of intervention. Thus, all concerns of the stakeholders shall be recorded in a project grievance logbook. Individuals can raise their grievances in name or anonymously, or through traditional institutions according to culture and context, as appropriate, which shall be recorded in written form. A grievance redress format/ template could be devised for this purpose, which would depend on the type and context of the grievance.

KVA office bearers should resolve all concerns or grievances raised by the communities, beneficiaries, etc. and in case an anonymous grievance has been put-up, it shall be addressed through public consultation through a village meeting, retorting generally to the raised point(s) and minutes of the meeting and outcomes shall be recorded. The grievance redress or compliance response is sent to the applicant in written, after resolving the grievance/ concerns.

However, in case the applicant (individual/ group) is not satisfied, she/he may approach to DPMU for further redress, or in case of grievances that are more serious in nature, the KVA officer bearer should forward such grievances to DPMU. In-charge of DPMU shall be responsible to redress the grievance in consultation with the KVA staff, concerned applicants. All grievances should be addressed, redressed and resolved at this level.

In case of more serious grievances, then they should be dealt with through the project hierarchy as necessary and any complainant should be made aware of their legal rights according to the relevant legal documents.

9. MONITORING AND EVALUATION

Project level Monitoring and Evaluation is important to promote accountability for the achievement of Project objectives through the assessment of results, effectiveness, processes and performance of the partners involved in Project activities; and to promote learning, feedback and knowledge sharing on results and lessons learned among the Project and its partners, as basis for decision-making on policies, strategies, programme management, and projects and to improve knowledge and performance. With this in mind, this M & E Framework has been developed. This chapter outlines the objectives of monitoring and evaluation, monitoring and evaluation plan, result framework and impact assessment. This chapter also explains how PMUs will implement the M&E plan, focusing in particular on the outline of the reporting mechanism set up by JICA. This also explains roles and responsibilities of PMUs and other implementing partners.

9.1 Objectives of Monitoring and Evaluation (M&E):

The main objectives of monitoring and evaluation are to:

- Provide continuous feedback to the project management and other stakeholders on the quality of project implementation;
- Institutionalize learning mechanisms;
- Facilitate appropriate and timely decisions; and to assess the outcomes and impact of the project vis-à-vis the objectives.

The M&E system of the HPCDP-II shall be guided by the principles that:

- The M&E system generates only relevant information that are required and used at the appropriate level and frequency for the decision making progress, and
- The system should help in assessing the outcomes and impact of the project vis-à-vis the objectives;
- The system should contribute to the capacity of all stakeholders involved in the process of planning and implementation of the project.

9.2 Monitoring and Evaluation Plan:

A Monitoring and Evaluation system for the project shall be established based on indicators as mentioned at Annexure-1 para 3-4 of MOD. The results as outlined in the indicators will be monitored annually and evaluated periodically during project implementation to ensure the project effectively achieves these results. The project monitoring and evaluation plan will also facilitate learning and ensure knowledge is shared and widely disseminated to support the scaling up and replication of project results.

In addition to these mandatory requirements, other M&E activities deemed necessary to support project-level adaptive management shall also be adopted during the course of Project implementation. This will include the exact role of project target groups and other stakeholders in project M&E activities including national/regional institutes assigned to undertake project monitoring.

9.3 Monitoring Responsibilities:

9.3.1 Project Director:

The Project Director is responsible for day-to-day project management and regular monitoring of project results and risks, including social and environmental risks. The Project Director shall ensure that all project staff maintains a high level of transparency, responsibility and accountability in M&E and reporting of project results. The Project Director shall inform the Executive Committee and Governing Council, the JICA India Office of any delays or difficulties as they arise during implementation so that appropriate support and corrective measures can be adopted. The Project Director shall develop 'Annual Plan of Operation' (APO) based on the year-wise targets including annual output targets to support the efficient implementation of the project. The Project Director shall ensure that the standard JICA-M&E requirements are fulfilled to the highest quality. This includes, but is not limited to:

Ensuring the indicators are monitored annually in time and that the monitoring of risks and the various plans/strategies developed to support project implementation (e.g. gender strategy, environmental and social safeguard strategy etc.) occur on a regular basis.

9.3.2 Executive Committee (EC):

The review meeting should be held every year or bi-annually, following the inception meeting. The EC shall take corrective action as needed to ensure that the project achieves the desired results. The EC shall hold project reviews to assess the performance of the project and appraise the Annual Plan of Operations for the following year. In the project's final year, the EC shall hold an end-of-project review to capture lessons learned and discuss opportunities for scaling up and to highlight project results and lessons learned with relevant audiences. This final review meeting will also discuss the findings outlined in the project terminal evaluation report and the management response.

9.3.3 Project Management Consultancy (PMC):

PMC with technical persons shall monitor project activities periodically and should provide technical feedback to the project team and also brief on issues to the EC and also provide technical assistance to the EC. PMC shall also contribute for coordination and harmonization of Project interventions at field level. PMC shall meet Project Director on regular basis as per the need to address issues in timely manner.

9.4 M&E Arrangements:

SPMU should regularly monitor and keep record of the physical and financial inputs and outputs of project activities. To facilitate this, Deputy Project Director, SPMU having relevant experience and skills in monitoring and evaluation shall be deployed for M&E purpose. He/she shall also possess required skills in order to guide IT professionals in GIS/MIS Cell. SPMU should procure all relevant resources to establish GIS Unit and should also strengthen the unit with capacity development programs. During project implementation, the main responsibility to manage and analyze data should be with the IT/GIS Cell of the Project, and such data would be utilized for generating various project reports/ maps. SPMU shall coordinate with all institutions according to the institutional arrangements, in monitoring the activities on day-to-day basis. DPMUs would further coordinate with the BPMUs to keep track of the project implementation. The

representatives from KVA will be trained to use simple tools to monitor project progress and impacts, and discuss its implications.

SPMU should establish web-enabled Management Information System (MIS), and should develop the software to meet the requirements of the Project. The developed MIS shall be utilized to consolidate and manage primary data reported by various implementing units or data received from various other agencies. The MIS software should have a feature to integrate data with GIS platform for undertaking spatial analysis. SPMU should also adopt Public Fund Management System (PFMS) software for fund management and project accounting, and should customized it for generating statements of expenditure at all operational levels viz., SPMU, DPMUs and BPMUs. Data from MIS shall be used to update the monitoring indicators of the Project to input into the monthly, quarterly, and annual progress reports. Use of GIS and other modern information tools will help collate, compare, analyze, and visualize the information.

GIS/MIS Specialists in PMC shall assist to review the existing M&E framework for the Project as well as to help SPMU in establishing M&E system and MIS/ GIS applications for the Project. PMC will also assist SPMU in developing MIS/ GIS facilities for different components of the Project against monitoring indicators (given in the Table below i.e. Qualitative and Quantitative Data of Monitoring Indicators) of the Project.

Table 9.1: Qualitative and Quantitative Data of Monitoring Indicators

Indicators	Unit	Original (Yr 2020)	Target (Yr 2031) 2 years after completion
Farm household income	INR	(to be decided)	(to be decided)
Net Irrigation Beneficiary Area Created	Ha	0	7933
Yield of selected crop in 306 sub-projects			
Tomato	t/ha	16.0	40.0
Cauliflower	t/ha	9.3	23.5
Pea	t/ha	5.6	12.6
Potato	t/ha	6.6	20.0
Wheat	t/ha	1.8	2.9
Maize	t/ha	1.9	2.7
Paddy	t/ha	1.8	2.0
Cultivation area of vegetables in CCA in 306 sub-projects in both seasons	Ha	2528	6944
Number of Self Help Group established (SHG)	Nos.	0	100

9.4.1 Components to be monitored under M&E:

1. Concurrent Process Monitoring
2. Input – Output Monitoring
3. Impact Evaluation

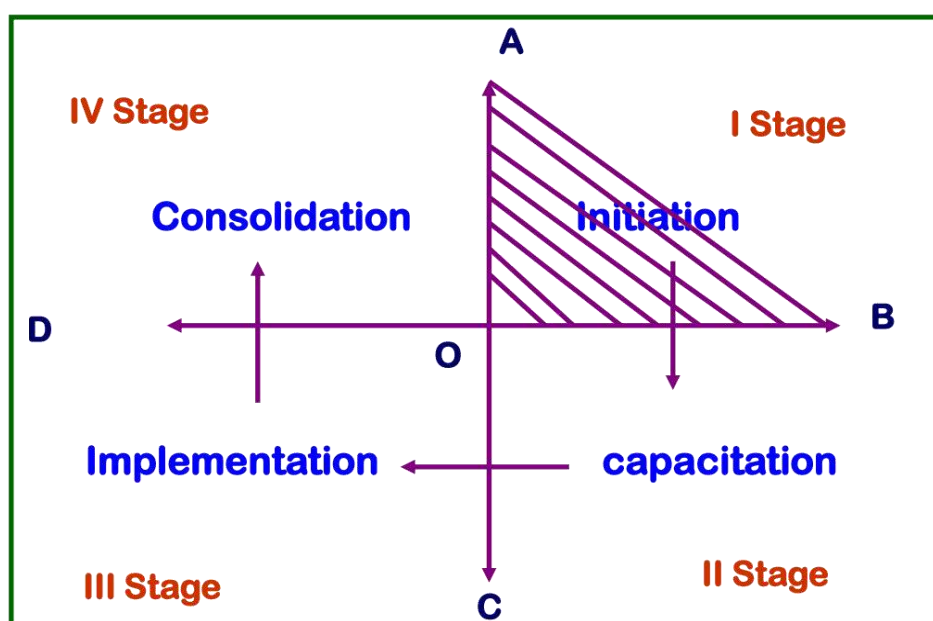
1. Concurrent Process Monitoring:

Major Processes to be monitored:

- Entry point activity (EPA)
- Sensitization and awareness
- CBO formation & functioning
- Capacity building
- Transparency
- Preparation of Annual Plan of Operation
- Implementation of Annual Plan of Operation
- Flow of funds and procurement procedures
- Income Generating Activities (Livestock / Skill based & Micro enterprises activities)
- Institutional functioning- KVAs and SHGs
- Convergence (with line Depts.)
- Withdrawal strategy
- Post project O&M strategy
- Sustainability

Separate indicators (Both qualitative and quantitative) to be developed for each of above processes

Project Stages and Process Monitoring:



Indicators

- **Prioritize**
- ↓
- **Identify new**
- ↓
- **Continue or discontinue old**
- ↓
- **Make changes (if needed)**
- ↓
- **Operationalise**

SHG	I st Six months	II nd six months	III rd six months	IV th six months
SHG (Indicators) →	Formation Meetings Attendance Savings	Capacitation Savings Meetings Lending	Financial transaction Book keeping	IGA Value additions Profit earned Sustainability employment

NB- Indicators to be redefined as per the stage of the project” Weightage to be shifted as per project time chart.

Process Monitoring carried out in Five-Stages-

Step-1 Collection of Data via Physical Surveys

Step-2 Process Data and GIS analysis as applicable Ex: graphs / tables

Step-3 Interpret Data using MIS. And other wise Ex: Trends Graphs / Patterns/ GIS outputs

Step-4 Use Findings for Learnings and Corrective Measures Ex: To change practice, inform policy, etc.

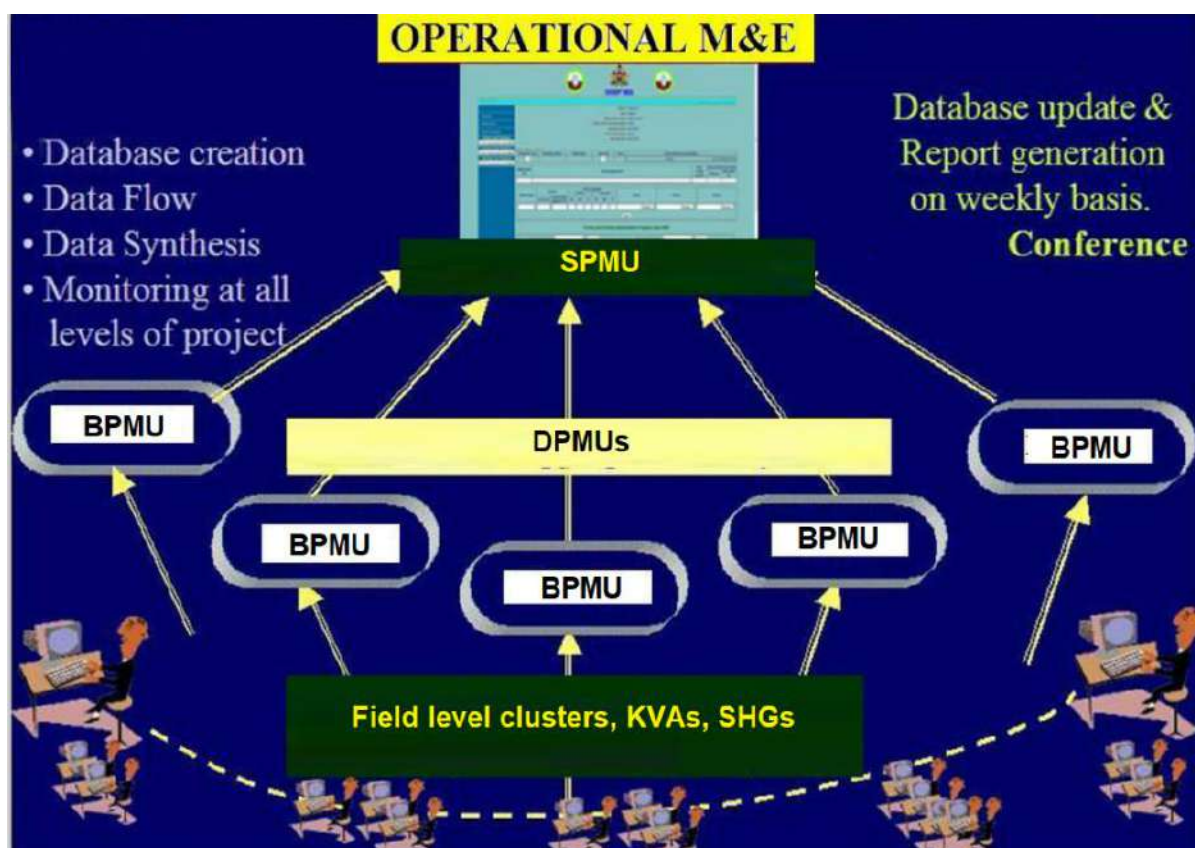
Step-5 Documentation of best practices and strategies for up scaling

Format for Process Monitoring (Observation) Report is given below-

Issues observed	Situational Status (What is happening in the field)	Reasons (Why it is happening)	Suggestion / Scope for improvement (What is desirable)	Stakehold ers to be involved
KVA Establishment & Functioning				
Implementation				
Transparency				
Capacity Building				
IGA & Micro Enterprises				

2. Input – Output Monitoring:

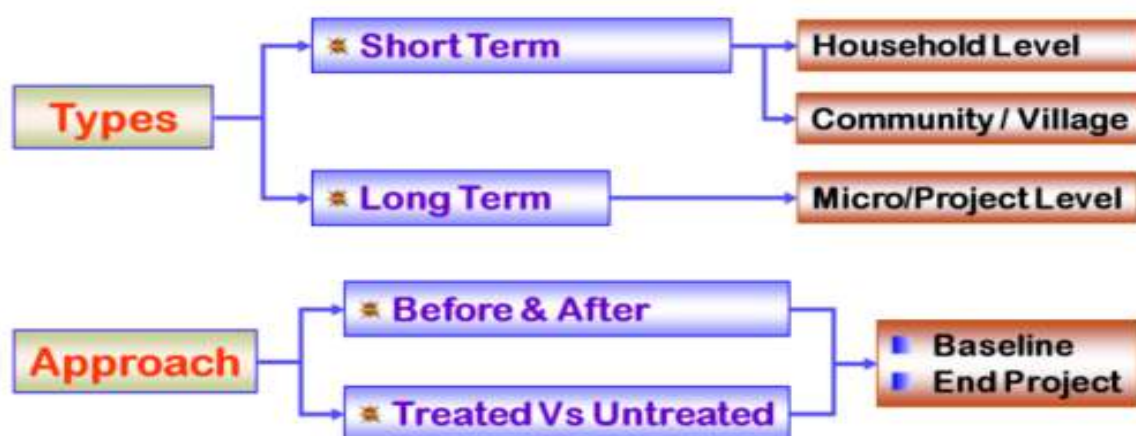
- Under the concurrent input-output monitoring, the financial and physical progress of the project would be monitored. □
- Aspects such as fund release from the PMUs to grass root level, actual condition/status of physical achievements, awareness creation, KVA's capacity building, etc will be monitored using specific indicators. □
- This would be done through the MIS deployed and operationalized by the project.
- M&E unit should verify the MIS data integrity through field verification on sample basis through process monitoring. □
- Project shall ensure flow of MIS data to M&E for analysis. □
- The MIS data thus received would be analyzed and the report would be made available to the top management once in six months.



3. Impact Evaluation

Since project will be implemented in four areas viz. Infrastructure development, Farmer support, Value Chain Development and Institutional Development, the Impact assessment should be focused in these areas. Impact assessment will be carried out by comparing initial study results (baseline) of sub-project areas with the results from the final study conducted (end term evaluation) after end of the project. Information like increase in area of farm land with diversified crops, increase in farmers' income in sub-projects, percentage of livelihood activities initiated through project's intervention and financial sustainability may be generated through questionnaire survey, interview/interaction, focus-group discussion, review of relevant document and field observation. Similarly, institutional capacity should be assessed.

Impact assessment



9.5 Reporting:

SPMU should prepare quarterly reports on prescribed reporting structure, and submit to JICA in a timely manner to apprise on the project implementation progress. SPMU should also publish annual report along with updated project implementation schedule after getting approval from the Governing Body at completion of each fiscal year. The reports will be available both in print forms as well as in digital form, and will also be shared by way of publications including project website to facilitate dissemination of information. SPMU will develop templates for annual reporting during first year of project operation. If required, the reporting templates may be shared to obtain concurrence from JICA.

These reports will include:

- (a) physical progress and financial expenditure by components/ sub-components against annual plan along with analysis, photographs and graphs to support claimed achievements;
- (b) project operation and effect indicators;
- (c) problems/ constraints encountered during the reporting period, with suggested remedial actions,
- (d) observation and recommendations of PMC and;
- (e) updated status on social and environmental safeguard requirements of the Project.

9.5.1 Annual Plan of Operation (APO):

Will be prepared for each fiscal year. SPMU should get the APO approved from GB preferably by December, for each financial year, and would share the same with JICA for information. SPMU should also establish a system of preparing demand responsive annual plans, involving key stakeholders. SPMU will provide all necessary guidance and support, and will regularly follow-up with stakeholders to get APO compiled well on time. Preparing demand responsive annual plan would require capacity development of the project staff and institutions at each operational level. SPMU would ensure to provide necessary training to all key stakeholders for the purpose. Table 9.2 Key Reporting Requirement at Various Levels shows key reporting requirement for the Project.

Table 9.2: Key Reporting Requirement at Various Levels

No .	Type of Report	Responsibility to generate Report	Submission Level	Circulation	Contents
1	Annual Report	SPMU	EC	State Govt., Ministry of Agriculture, GOI, JICA, Line Dept.	- Achievement (physical and financial) and status against the annual plan, shortfalls, if any - Successful cases and innovations - Inter-sectoral Convergence efforts - Way forward - Photographs, graphs etc. - To be printed and uploaded on website and kept in public domain

No .	Type of Report	Responsibility to generate Report	Submission Level	Circulation	Contents
2	Quarterly Report	SPMU	JICA	EC, State Govt.	<ul style="list-style-type: none"> - Achievement (physical and finance) and status against the annual plan on prescribed format, and reasons for shortfall, if any - Inter-sectoral Convergence efforts - Problems and constraints, and corrective actions/ measures taken - Photographs, graphs etc.
3	Statement of Expenditure (SOE)	SPMU	JICA	JICA/ CAAA, Ministry of Agriculture/ GOI, DEA, State Govt.	<ul style="list-style-type: none"> - Reimbursement claims based on financial reporting and consolidated expenses at BPMUs, DPMUs and SPMU level, against the annual plan - The SOE to be prepared based on the entries made in the accounting software
4	Annual Plan of Operation (APO)	SPMU	EC	SPMU, DPMU, BPMU	<ul style="list-style-type: none"> - Planning activities as per Overall Implementation Plan (OIP), - Plan for backlog/ delayed activities, and Strategy; - Component-wise and activity-wise fund requirement
5	Statutory Audit Report	SPMU	EC	JICA/ CAAA, Ministry of Agriculture/ GOI, DEA	<ul style="list-style-type: none"> - Confirming the SOEs and eligible portions - Annual Audit Report on standard/ prescribed format
6	Monthly Reports	DPMU, BPMU,	SPMU	Internal Project offices	<ul style="list-style-type: none"> - Achievement (physical and finance) and status against the annual plan, and reasons for shortfall, if any - Inter-sectoral Convergence efforts - Problems and constraints - Photographs, graphs etc.
7	Back-to-Office Report (BTOR)	By visiting officers	as applicable	All concerns	<ul style="list-style-type: none"> - Observations on the project implementation progress vis-à-vis annual plan, identifying the issues/ areas of concern, status on action points etc.

9.6 Gender Sensitivity of M&E:

The project should give due consideration to gender mainstreaming while designing livelihood interventions, including development of value-chain analyses, in the targeted areas. This may be done by identifying different gender roles through the use of a gender analysis matrix and based on results will come up with specific interventions and gender action plans to address gender gaps during the implementation phase. Furthermore, gender considerations should be addressed during village level planning through ensuring participation of both genders.

To assure gender consideration in project planning, implementation and benefit distribution, an effective gender-sensitive monitoring and evaluation system should be undertaken at different points of the project cycle, based on gender awareness, and the use of gender analysis. To make gender sensitive monitoring, Project shall train staffs on gender analysis and planning. The result framework should have gender wise differentiated baseline and target indicators and Project Director in his/her regular monitoring should ensure that these indicators are monitored. To re-assure sensitivity of M&E on gender, baseline and targets shall be reviewed. Project Director while developing Annual Plan of Action and monitoring plan shall also ensure gender sensitive monitoring. Quarterly and Annual Review by SPMU and EC through quarterly and annual reports and observation and interaction with beneficiaries during site visits shall also confirm that the gender aspect is well addressed. Implementing partners (e.g. SAU etc.) also should ensure that implementation is undertaken with full consideration of gender aspects. Likewise, Mid-term Review and Terminal Evaluation should have provision of analysis of gender consideration in the overall project implementation process.

10. COMMUNICATION, GOVERNANCE & ACCOUNTABILITY

10.1 Introduction:

Governance and accountability can be ensured by good information management, *suo moto* disclosure of all project related information and proper mechanisms for handling of complaints or grievances. As a custodian of public funds, the Project Authority is directly accountable to the Executive Committee/Governing Body of HPADS and to the Department of Agriculture, GoHP. All stakeholders residing in the project area have the right to be informed of the project and its impacts. As such, public accountability is further enhanced through pro-active disclosure policies, which make information concerning Project activities available to the public prior to, during and after project implementation, in the absence of a compelling reason for confidentiality. To enable the public to be able to effectively voice their opinions, the Project shall also establish a system to deal with external complaints on Project related developmental activities.

To enhance the governance and accountability, the undermentioned four actions are required to be adopted in the Project:

- Augmentation of existing information systems for better record keeping and management;
- Voluntary and upfront disclosure of information to the general public including stakeholders thus resulting in increased accountability;
- Public Grievances Redressal Mechanism
- Appropriate Monitoring Indicators to help the SPMU to monitor various activities concurrently.

The following sections describe specific actions in each of the areas mentioned above.

10.2 Augmentation of Management Information System (MIS):

A Management Information System (MIS) is an information system used for decision-making and for the coordination, control, analysis, and visualization of information in any organization. The study of the management information systems involves people, processes and technology in an organizational context.

Use of MIS in the Project may preferably be addressed through implementation of Web-Enabled Information Management system. This will help in better management and implementation of the Project.

Digitization of processes and management information system may be carried out through creation and implementation of technical, financial and operational management capacity using Web-Enabled MIS systems. The Deputy Project Directors of the SPMU will have the added responsibility to work as the Information Officer for the Project. They will be supported by other officials of the SPMU in carrying out this work.

10.3 Disclosure Policy:

As a part of the disclosure policy, the SPMU/DPMU/BPMU shall provide in a timely and regular manner all relevant information to all stakeholders, affected parties, and the general public, except when otherwise warranted by legal requirements, voluntarily and upfront. Access by the public to information held or generated by the SPMU/DPMU/BPMU will facilitate the transparency, accountability, and legitimacy of the operations undertaken by the Project.

The designated Information Officer or, in his/her absence, the officer as may be authorized by the Project Director, shall be responsible for ensuring timely and complete dissemination in accordance with this policy.

The following general information concerning the Project shall be disclosed:

- Description of the different components of the Project;
- Physical and Financial progress of works under each component of the Project;
- Location and basic information on the implemented works.
- Grievances Redressal Mechanism;
- Evaluation Reports, including project performance indicators,

The following may be the means of disclosure and dissemination of information

1. Website of the Project at SPMU level.
2. Quarterly News Letter.
3. Annual Reports.
4. Information Brochures.
5. Project Interpretation Gallery at SPMU and at DPMUs.
6. Standard and permanent signboards at every activities implemented at Sub-Projects and each of the work sites.
7. Transparency Boards containing all relevant information at the entry points of Sub-projects and all Project Offices and work sites.

10.4 Complaints and Response:

This system shall include maintaining record for monitoring the status of follow up, of each received grievances, comments/ suggestions. The implementation of the system will be monitored by the Deputy Project Directors of the SPMU with supporting assistance from the SPMU staff.

The mechanisms shall include provision for follow up investigations of substantial complaints by auditors, or third party to ensure independence and reliability of the system.

For the complaint mechanism to function efficiently, the information concerning the alternative conduits for complaint (name & contact information including email and official communication address of the complaint handling officers) shall be widely publicized. Web-based campaigns, newspaper advertisements and displays on hoardings at highly visible locations will encourage public to report information on any grievances to the SPMU.

The Deputy Project Director who is the Information Officer of the SPMU shall be responsible for monthly updates of the system on the website. Tracking of the status of investigations and measures taken shall be reported by the SPMU in quarterly reports to the Executive Committee and semi-annual reports to the Governing Body.

10.4.1 Responding to Procurement Complaints:

Procurement related inquiries and complaints from suppliers, contractors or consultants may occur from time to time. Complaints require prompt, careful and consistent responses from the Deputy

Project Director of the SPMU who is also functioning as the Information Officer for the Project and, if necessary, by the Project Director as well.

All complaints during the bidding/award stage as well as complaints during the contract execution along with the analysis and response of the SPMU shall invariably be submitted to the Department of Agriculture, GoHP and JICA for review.

General inquiries about SPMU procurement policy, procedures and guidelines shall be dealt with, by the Deputy Project Director (dealing with procurement) within 20 working days of receipt of the inquiries/complaint. All complaints received directly from bidders relating to a specific procurement shall be in writing. They are to be received and then reviewed by the Deputy Project Director (dealing with procurement) of the SPMU, and dealt with in the following way:

- Record all complaints, whether they are referred from other recipients or directly, in a register to be maintained in a secure location in his/her own office. The email and official address of the Deputy Project Director (dealing with procurement) of the SPMU is to be made public on the Project website and noted in all pre-bid and pre-proposal meetings.
- Within 5 working days of receipt of complaint, an acknowledgement should be sent in writing to the complainant indicating that the SPMU is considering the issues raised and will discuss them with the concerned officers.
- After thorough review of the documents in question as well as interviewing of officers concerned as necessary, make a judgment as to the validity of the complaint.
- Within 15 working days, submit a report to the Project Director with his/her own assessment as to the validity of the complaint and a clear recommendation on how any substantiated complaint should be remedied.
- If the complaint is received after the awarding of contract to the successful bidder, respond to it in broad terms, without compromising the confidentiality of other bids and a copy of the correspondence shall be then sent to the Executive Committee. The Executive Committee shall determine, after consultation with appropriate legal counsel, as to how best to proceed.
- Write to all complainants within 30 working days of the receipt of such complaint as to the final decision of the competent authority.

10.4.2 Responding to Complaints on Construction Quality:

Complaints from the public relating to the quality of a specific work, goods or services shall be received directly in writing. They are to be received and then reviewed by the Deputy Project Director (specifically dealing in that area) of the SPMU and dealt with in the following way.

- Record all complaints, whether they are referred from other recipients or directly, in a register to be maintained in a secure location in his/her own office.
- The email and physical address of the Deputy Project Director (specifically dealing in that area) of the SPMU is to be made public.
- Within 5 working days of receipt of complaint, acknowledge receipt in writing to the complainant indicating that the SPMU is considering the issues raised and will discuss them with the concerned officers.

- Consult with the officials responsible for technical matters and other relevant officers and, after thorough review of the facts as well as interviewing of officers concerned as necessary, shall make a judgment as to the validity of the complaint.
- Within 20 working days of receipt of complaint, instruct the relevant officer to take remedial action as necessary.
- Write to the complainant within 30 working days of the receipt of such complaint as to the final decision of the Project Director.

10.5 Coordination Mechanism for Environmental and Social Issues:

Coordination and grievances redressal Mechanism is an important aspect in projects involving multiple stakeholders. The sub-projects under the Project may require coordination and redressal of grievances for various matters such as land selection with relation to setting up minor irrigation facility, farm access road etc., O & M and other conflict resolution. To address such issues, the following project coordination-cum-grievance redressal committee may be formed.

10.5.1 District Level Coordination Committee:

The committee shall have the following members:

- Deputy Commissioner: Chairman or his/her nominated representative
- Superintending Engineer, Irrigation & Public Health Engineering Department
- Superintending Engineer, Electricity/Power Department
- Conservator of Forest
- Deputy Director, Agriculture, Department of Agriculture
- District Revenue Officer
- Project Officer, District Rural Development Agency
- Scientist In-charge, Krishi Vigyan Kendra
- Deputy Project Director, Soil and Water Conservation, HPCDP- II
- Non-official member (with experience and exposure in agriculture sector): to be nominated by Chairman
- District Project Manager of respective DPMU: Member Secretary

The District Level Coordination Committee (DLCC) will be responsible for hearing and deciding on resolution of issues pertaining to –

- i) donation or acquisition of land for the project within the jurisdiction of the district;
- ii) reversion of land donated by the individual farmer but land not used for the purpose of the project within the jurisdiction of the district;
- iii) issues relating to survey investigation for preparation of detailed project reports relating to the areas within the jurisdiction of the district;
- iv) matters concerning distribution of water, especially of any excess use of water by an individual farmer over and above the allotted quantum and redistribution of water unused and available; and issues in respect of rotational maintenance of irrigation system by the members of Krishak Vikas Associations (KVA) located within the district.

If required and depending on the seriousness of the issue, this coordination committee may also look into other grievances, if any, affecting and relating to the project, for redressal. The District Level Coordination Committees (DLCC) shall meet once in a year or as per the requirement.



HIMACHAL PRADESH CROP DIVERSIFICATION PROMOTION PROJECT (Phase-II)

Operation and Maintenance Manual for All Project Facilities

AECOM

October 2024

Abbreviations

APMC	Agricultural Produce Marketing Committee
ARV	Air Release Valve
BPMU	Block Project Management Unit
BPT	Break Pressure Tank
CAT	Catchment Area Treatment
CCA	Cultivable Command Area
CGTMSE	Credit Guarantee Fund Trust for Micro and Small Enterprises
CM	Community Motivator
Cu. m.	Cubic meter
DAC&FW	Department of Agriculture, Cooperation and Farmers' Welfare
DoA	Department of Agriculture Himachal Pradesh State
DPD	Deputy Project Director
DPMU	District Project Management Unit
DPR	Detailed Project Report
DT	Distribution Tank
FC	Field Channel
FIG	Farmers' Interest Groups
FIS	Flow Irrigation Scheme
FOs	Farmers' Organization
FP	Flood Protection structure
GI	Galvanized Iron pipe
GoHP	Government of Himachal Pradesh
GoI	Government of India
HDPE	High Density Polyethylene pipe
HP	Himachal Pradesh
HP	Horsepower
HPCDP	Himachal Pradesh Crop Diversification Promotion Project
IPHD/JSV	Irrigation and Public Health Department/Jal Shakti Vibhag
JICA	Japan International Cooperation Agency
KVA	Krishak Vikas Association
LIS	Lift Irrigation Scheme
LPS	Liter Per Second
L-section	Longitudinal section
M	Meter
MDT	Main Delivery Tank
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee
MIS	Micro Irrigation Scheme
MoA	Ministry of Agriculture Government of India
MoD	Minutes of Discussion
MS	Mild Steel
NABARD	National Bank for Agriculture and Rural Development
NGO	Non-Governmental Organization

NOC	No Objection Certificate
NRV	Non-Return Valve
O&M	Operation and Maintenance
ODA	Official Development Assistance
OHSR	Over Head Service Reservoir
OL/H	Outlet/Hydrant
PD	Project Director
PVC	Polyvinyl Chloride pipe
PW	Percolation Well
QA&QC	Quality Assurance and Quality Control
SFAC	Small Farmers' Agribusiness Consortium
SHG	Self-help Group
SPMU	State Project Management Unit
SV	Sluice/Scour Valve
SW	Sump Well
TIS	Tank Irrigation Scheme
TOR	Terms of Reference
TOT	Training of Trainers
TWIS	Tube Well Irrigation Scheme
WR	Water Requirement
WUA	Water Users' Association

Terminologies

Sub-project	The irrigation scheme or site found to be feasible for the implementation of project activities.
CCA	Cultivable Command Area (CCA) is the area that is proposed to be covered by the irrigation sub-project under the project.
Household	The group of people who live in one house and have one kitchen.
Landholding	The area of land owned by the household.
Landowner	The person who owns agriculture land as per the revenue record.
Land custodian	Landowner or the legal heir of landowner.
Land cultivator	The person who is cultivating the land.
KVA	Krishak Vikash Association (KVA) is an association of landowners of sub-project, irrespective of the village or Panchayat or Block: formed for the planning, evaluation, marketing, operation, and maintenance of project farms related interventions.
GH member	KVA General House member
MC Member	KVA Management Committee members
Kharif	This is the summer crop for which sowing is done in April to June and harvesting is done in September-Oct.
Rabi	The winter Crop in which sowing takes place in September- December and harvesting is done in April and May.
Zaid	Short crop season of 60-65 days between Kharif and Rabi crop seasons to grow early maturing crops.
CII	Cropping Intensity Index (CII) is the total cropped area/ CCA x100
CDI	Crop Diversification Index (CDI) = $1 - \frac{\sum(x^2)}{\sum(x)^2}$ % age of total harvested area under n crops /No. of n crops Where, n crops are those which individually occupy 5% or more of the total harvested area.

Table of Content

1. INTRODUCTION	1
1.1 Background	1
1.2 Operation and Maintenance and its Significance.....	1
1.3 Facilities Developed by HPCDPP-II	2
1.4 Purpose of the O&M Manual.....	3
1.5 Content of this O&M Manual	4
2. INSTITUTIONS RESPONSIBLE FOR O&M.....	5
2.1 Farmers' Organization formed by the Project	5
2.1.1Krishak Vikash Association (KVAs).....	5
2.1.2Farmer Interest Groups (FIGs)	6
2.1.3Self-help Groups (SHGs).....	7
2.1.4Farmers Produce Organizations (FPOs)	8
2.2 Relevant Government Agencies	10
2.2.1Local Governments.....	10
2.2.2Department of Agriculture (DOA)	10
2.2.3Jal Shakti Vibhag (JSV)	10
2.2.4Other Line Agencies and NGOs	11
3. PLANNING FOR OPERATION AND MAINTENANCE.....	12
3.1 Development of Operation Plan for Irrigation Schemes.....	12
3.1.1Accurate assessment of command area	12
3.1.2Development of irrigation schedule (<i>warabandi</i>).....	13
3.1.3Preparation of operation plan	15
3.2 Planning of Maintenance Works in Irrigation Schemes	17
3.2.1Types of maintenance work in irrigation schemes	17
3.2.2Preparation of maintenance plan	17
3.3 Planning for O&M of Other Project Facilities.....	18
4. OPERATION AND MAINTENANCE OF FIS.....	19
4.1 Operation of FIS	19
4.1.1Water allocation in FIS.....	19
4.1.2Water distribution and grievance redressal in FIS.....	19
4.2 Maintenance for FIS	20
4.2.1Routine maintenance of FISs.....	20
4.2.2Periodic maintenance of FISs	21
4.2.3Emergency maintenance of FIS.....	21
5. OPERATION AND MAINTENANCE OF LIS.....	22
5.1 Operation of LIS	22
5.1.1Preparatory works for operation of LIS.....	22
5.1.2Monitoring works during irrigation season	22
5.2 Maintenance in LIS.....	22
5.2.1Routine maintenance of LISs	23
5.2.2Periodic maintenance of LISs.....	24
5.2.3Emergency maintenance of LISs	25
6. OPERATION AND MAINTENANCE OF TWIS/PERCOLATION WELL.....	26
6.1 Operation of TWIS	26
6.1.1Operation of the tubewells.....	26
6.1.2Operation at the on-farm level.....	26
6.2 Maintenance for TWIS	27
6.2.1Routine maintenance of TWIS	27
6.2.2Periodic maintenance of TWIS.....	27
6.2.3Emergency maintenance of TWIS.....	28

7. O&M OF BUILDINGS AND FARM ACCESS ROAD.....	29
7.1 Operation and Maintenance of Buildings	29
7.1.1 Preventive measures	29
7.1.2 Regular maintenance of buildings	30
7.1.3 Periodic and preventive maintenance of buildings	31
7.1.4 Emergency maintenance of buildings	31
7.2 Operation and Maintenance of Farm Access Roads	31
7.2.1 Maintenance, Repair and Rehabilitation of Cement Concrete Pavements	32
7.2.2 Maintenance, Repair and Rehabilitation of Cement Concrete Pavements	34
8. O&M OF MICRO IRRIGATION AND OTHER FACILITIES.....	36
8.1 Operation and Maintenance of Drip Irrigation Scheme	36
8.1.1 Operation of drip scheme components	36
8.1.2 Maintenance of drip scheme components	36
8.1.3 Maintenance of fertigation equipment	41
8.1.4 Troubleshooting in drip irrigation system	44
8.2 Operation and Maintenance of Sprinkler Irrigation Scheme	45
8.2.1 Operation and monitoring of sprinkler irrigation system	46
8.2.2 Maintenance of sprinkler irrigation system	46
8.2.3 Troubleshooting in sprinkler schemes	49
8.2.4 Maintenance of pipes and fittings of sprinkle systems	50
8.2.5 Maintenance of underground micro/mini-sprinkler irrigation system	50
8.2.6 Storage of sprinkler equipment	51
8.3 Operation and Maintenance of Solar Pumping System	52
8.3.1 Operational guidelines for various components of solar pumping system	52
8.3.2 Maintenance Guidelines of Solar Pumping System	54
8.4 Operation and Maintenance of Solar Fencing	54
8.4.1 The dos and don'ts for solar fencing	55
8.4.2 Maintaining solar fence scheme	55
8.5 Operation and Maintenance of Agri-machinery and Implement	55
8.5.1 O&M of tractors for farm operations	56
8.5.2 O&M of ploughs for tillage	58
8.5.3 O&M of thresher for harvest	60
8.5.4 O&M of Spraying equipment	63
9. MANAGEMENT SUPPORTS FOR O&M FUNCTIONS.....	68
9.1 Institutional Strengthening of Related Institutions	68
9.1.1 Awareness raising and capacity building	68
9.1.2 Institutional strengthening of the FOs	69
9.1.3 Addressing environmental and social issues	71
9.2 Financial Management Improvements	72
9.2.1 Water tariff fixation	72
9.2.2 Financial management	73
9.2.3 Sustaining mechanisms	74

LIST OF FIGURES

Figure 1: Location of Sources of the Identified Irrigation Sub-projects	3
Figure 2: The Process of Developing the Operation Plan.....	12
Figure 3: Dividing Command Area into Different Blocks based on Water Distribution.....	14
Figure 4: The Process of Developing a Maintenance Plan	17
Figure 5: Back-wash Cleaning of Sand Filter in a Drip System	39
Figure 6: Chemical or Acid Treatment Procedure for Cleaning Drip System	42

LIST OF TABLES

Table 1: Generalized Values of Frequency of Irrigation for Different Crops	15
Table 2: Sample Inventory of Maintenance Work	18
Table 3: Concrete Pavement Repair Techniques (Preventive Activities)	33
Table 4: Concrete Pavement Repair Techniques (Corrective Activities)	33
Table 5: Annual calendar of Road Maintenance Activities for Rigid and Flexible Pavements	34
Table 6: Quality of Flushing for Different Water Sources at Different Intervals	38
Table 7: Troubleshooting Potential Problems of Micro Irrigation Systems.....	44
Table 8: Maintenance Schedule for Sprinkler Irrigation System	47
Table 9: Maintenance Schedule for Pumps in Sprinkle Irrigation System	48
Table 10: General Pump Glitches and their Causes in Sprinkle Irrigation System.....	48
Table 11: Inspection and Maintenance Schedule for Solar Pumping System.....	53

LIST OF ANNEXURES

Annexure 1: Units and Measures	77
Annexure 2: District wise Data of Minor Irrigation Infrastructure to be Developed.....	78
Annexure 3: Irrigation Water Demand Collection Form	79
Annexure 4: Critical Periods of Irrigation for Major Crops	80
Annexure 5: Maintenance Log of Routine Maintenance in FIS	82
Annexure 6: Maintenance Log of Periodic Maintenance of FIS	83
Annexure 7: Maintenance Log of Emergency Maintenance of FIS	84
Annexure 8: Operation record of FIS	85
Annexure 9: Maintenance Log of Routine Maintenance in LIS	86
Annexure 10: Maintenance Log of Periodic Maintenance of LIS	87
Annexure 11: Maintenance Log of Emergency Maintenance of LIS	88
Annexure 12: Operation record of LIS	89
Annexure 13: Maintenance Log of Routine Maintenance in TWIS	90
Annexure 14: Maintenance Log of Periodic Maintenance of TWIS	91
Annexure 15: Maintenance Log of Emergency Maintenance of TWIS.....	92
Annexure 16: Operation record of TWIS	93
Annexure 17: Maintenance Norms, Frequency of Application of Finishing Items.....	94
Annexure 18: Useful Life of Various Electrical Equipment/Installations Etc.....	95
Annexure 19: Sample Cash Book	96
Annexure 20: Sample Bill Register	97
Annexure 21: Sample Bill Register	98
Annexure 22: Sample Asset Registry	99
Annexure 23: Sample Bill Register	100
Annexure 24: Sample Register of Landholders	101

1. INTRODUCTION

1.1 Background

Himachal Pradesh Crop Diversification Promotion (HPCDP) Project (Phase-II) is being implemented in the state of Himachal Pradesh with the financial support from Japan International Cooperation Agency (JICA). The Projects aims to promote agricultural productivity, sustainable crop diversification to high value crops and improvement of farmer's income by development of production infrastructures such as irrigation facilities and access farm roads, farmers support and institutional development as well as strengthening farmer's sales force with marketing development, thereby contributing to economic and social development in all districts of Himachal Pradesh.

AECOM was selected as the Project Management Consultant (PMC) for the project at the end of December 2022. Since the inception of the project in January 2023, the PMC team has been providing necessary technical and management support to State Project Management Unit (SPMU). The scope of work of PMC includes assisting SPMU in preparing and reviewing manuals and guidelines for the project activities. This Operation & Maintenance Manual (English) is one of the reporting deliverables of PMC specifically mentioned in the Minutes of Discussion (MOD) for the project between JICA and Department of Agriculture (DOA), Government of Himachal Pradesh (GoHP).

1.2 Operation and Maintenance and its Significance

Operation is defined as being functional, in effect or active while maintenance is the combination of all technical and administrative actions, including supervision actions, intended to retain an item in, or restore it to, a state in which it can perform the required function. In the context of irrigation, operation entails the implementation of smooth and timely actions for the supply of required amount of irrigation water to the farmers' field while maintenance is the act of keeping the canals, structures, and other facilities in smooth functioning conditions.

Operation is needed to deliver the predetermined flows to the demarcated points at prescribed times for specified durations by matching the supply with the demand as closely as possible. Maintenance is needed because of the effect of gradual natural processes like siltation, weed infestation, debris deposition etc. or because of the effect of human actions like tampering, digging, etc.

Operation is focused on adjusting the setting of structures while maintenance focusses on maintaining the capacity of the structures. However, despite their distinctions, these two terms are evidently closely linked with each other. Both are part of irrigation scheme management. Moreover, lack of timely maintenance results in changes in the hydraulic properties of a channel ultimately affecting the operations while observation of changes in hydraulic properties during operation indicates the need for specific maintenance. Hence, these two terms are commonly used as one i.e., Operation and Maintenance (O&M).

During the implementation of this HPCDP-II project many facilities and institutions will be developed. It is in the interest of the project that these facilities and institutions sustain and provide the intended benefits to the targeted stakeholder not just during the project but also beyond. The assets created by the project should produce the desired benefits both during project period and beyond. Many development projects function well during the project period but have been observed to crumble down as soon as the project is completed. This is one thing that this project would like to avoid. The project is geared towards ensuring that its outputs are sustained and that the targeted benefits are produced for their full life span which extends much beyond project period.

Explorations into the causes of lack of sustainability of facilities created by many development projects in the developing countries have traced to the lack of proper attention to the operation and maintenance of the concerned project facilities. This highlights the significance of proper operation and maintenance in achieving the full benefit from any project. To ensure proper operation and maintenance of project facilities, it is crucial that a system be established for operation and maintenance. For this, it is essential that a standard procedure for O&M of project facilities be developed and for it be documented so that the concerned people can refer to it and be fully acquainted with it as well as to update and refine it as required. This will ensure the safeguard the life span of the facilities. It is also emphasized that this O&M process be discussed with the concerned stakeholders including community members / Krishak Vikash Association (KVA) members right from the beginning as the KVAs will be mainly responsible for the O&M with technical support from DOA. As per the MOD, the DOA will support the KVA in mobilizing funds from subsidy schemes of State/Central Government and Panchayati Raj Institution (PRI).

1.3 Facilities Developed by HPCDPP-II

The various facilities developed through the project can be briefly summarized as follows:

- i) Water source development
- ii) Construction / rehabilitation of flow irrigation schemes
- iii) Construction of lift irrigation schemes including solar pumping
- iv) Construction of tube well irrigation schemes
- v) Construction of tank irrigation scheme
- vi) Establishment of micro-irrigation, irrigation accessories and equipment including solar fencing.
- vii) Construction of buildings and access roads
- viii) Catchment area treatment

In total, 296 irrigation sub-projects are planned to be constructed by the project and 10 sub-projects through convergence with the Jal Shakti Vibhag (JSV). Hence the securing and developing of 296 water sources can be considered as the first facility developed by the project. Minor repair may be expected from the beneficiaries, but the ownership of these works lies with the DOA and O&M responsibilities of these sub projects lies with the KVA. Hence, in the case of natural calamities and major damage, the DOA will shoulder the responsibility.

These sources are essential to keep the irrigation scheme functional and the performance of the irrigation scheme will be adversely affected if the sources are impacted by various reasons like natural calamities and climate change. The investment made in the whole sub-project can be futile if no water is available at the source. Hence, it is evident that proper preservation be carried out of these water sources developed by the project. In general, water sources selected by the project are adequate and suitable in terms of water availability and water quality and are unlikely to face any sustainability issues. The proposed surface water sources in this project are the tributaries of the major Rivers (like Beas and Sutlej), Khads and Nallahs. These rivers are perennial, and are generally snow and rainfed, and some have springs as origins. Only the major rivers are gauged for flow. Most of these streams carry high flow during monsoon and post monsoon months (July to October), after which flow slightly reduces but retain considerable (medium) flow in the months of November-February. After this, the flow further reduces in the months of March and April (low flow), followed by lean flow season of May and June. The snow-fed rivers carry considerable flow even during May and June but show lean flow during December-January. Therefore, depending on the nature of river/stream contribution from rain, snow, etc., lean season varies. In line with Himachal Pradesh Water Policy, 2013 which aims to ensure

equitable and adequate water to all key stakeholders, the province will strive towards protecting all water sources especially those developed by additional investments through different projects.

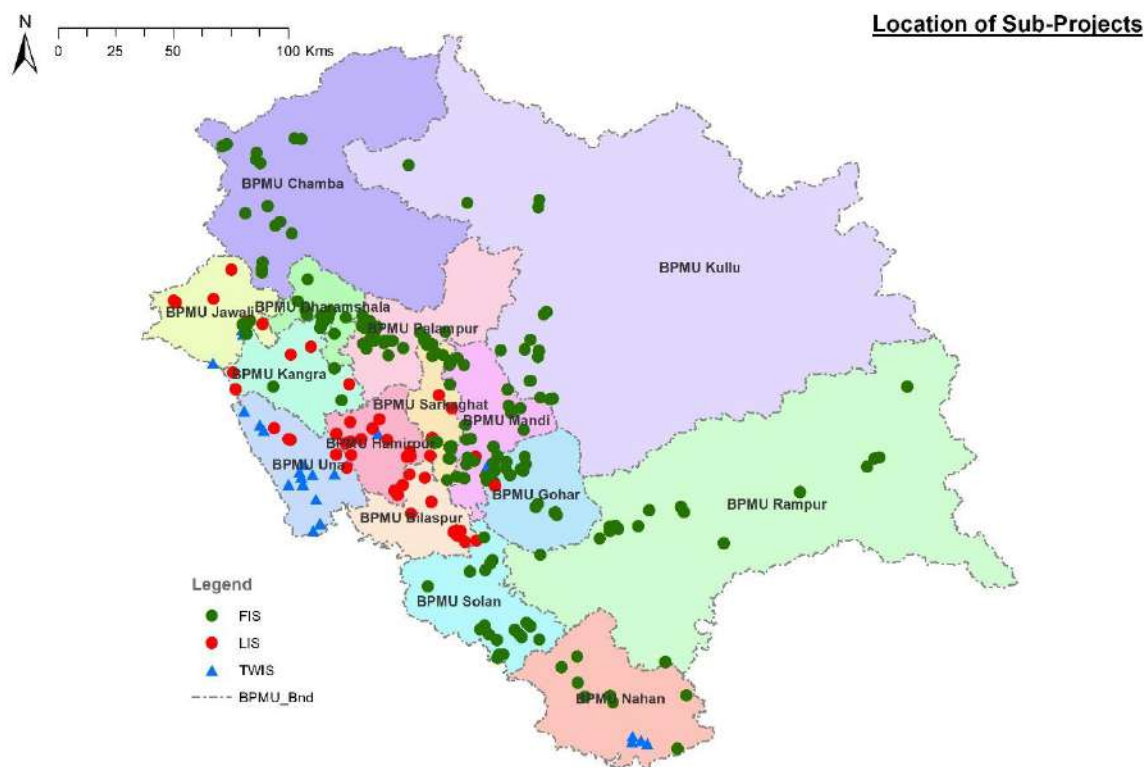


Figure 1: Location of Sources of the Identified Irrigation Sub-projects

Along with the water sources, the conveyance and distribution system will also be constructed for these 296 schemes. District-wise inventory of the infrastructure planned to be developed in the irrigation sub-projects (FIS, LIS and TWIS) as per MOD has been presented in **Annexure 2**.

Likewise, the project will also carry out catchment area treatment in essential areas for the protection of the catchment areas of the irrigation schemes.

1.4 Purpose of the O&M Manual

This O&M Manual has been prepared with the objective of documenting the operation and maintenance procedures for successful implementation of the project facilities on the ground. It will provide contents that may be useful for all concerned stakeholders including Project staff, DOA staff, members of Krishak Vikash Association (KVA), as well as ordinary farmers on how to sustainably operate and maintain the facilities created by this project. It can also be used for training purposes as it helps in understanding the components and workings of the various project facilities and assists in servicing and troubleshooting the issues in operating them. It also explains the various types of maintenance like routine, periodic and emergency maintenance for each of the different types of irrigation schemes and the other facilities developed by the project. The estimated life span of the facilities can be assured and even increased by strictly adhering to the procedures outlined in this manual and following the recommendations provided therein.

1.5 Content of this O&M Manual

This Manual includes nine chapters. It begins with an introductory chapter that outlines the background of the project and the provision of preparation of the manual. It also explains the significance of operations and maintenance and describes the various facilities developed by the project that need operation and maintenance. It then goes on to outline the different purpose of the manual and its content.

The second chapter discusses about the various institutions and actors and their roles and responsibilities in terms of operation and maintenance of the facilities developed by the project. It provides brief descriptions of all the physical and institutional assets created by the project.

Chapter 3 describes the conservation and maintenance actions required for the purpose of preservation of water sources of the different irrigation sub-projects under the project. Then, Chapter 4, 5 and 6 provide description of the operation and maintenance procedures of the three main categories of the irrigation sub-projects, namely: flow irrigation schemes (FIS), lift irrigation schemes (LIS) and tube well irrigation (TWIS), respectively. Similarly, Chapter 7 provides description of the maintenance of buildings and farm access roads that will be constructed under the project. Likewise, Chapter 8 outlines the procedure of operation and maintenance of the micro-irrigation and other accessories established by the project.

Finally, Chapter 9 of this manual is devoted towards the discussion on necessary management support required from the smooth implementation of the operation and maintenance functions. It dwells on the part on institutional strengthening of the relevant institutions as well as ensuring the necessary financing for the O&M functions. The **24 Annexures** attached with the main report provide templates and supporting information for O&M related functions.

2. INSTITUTIONS RESPONSIBLE FOR O&M

Various institutions have various responsibilities in the operation and maintenance of the different facilities developed by the project. These institutions can be primarily divided into two types: the first is the various types of organization of farmers formed by the project for specific purposes and second is the existing government agencies that are mandated to provide specific services to the public. This chapter of the manual discusses about these different institutions including their role in the operation and maintenance of the different project facilities.

2.1 Farmers' Organization formed by the Project

As part of the project activities various Farmers Organizations (FOs) are formed for different purposes. These FOs also have an important role in operating and maintaining the facilities developed by the project. Brief description of these FOs and their roles and responsibilities including their roles in the operation and maintenance of project facilities have been provided below.

2.1.1 Krishak Vikash Association (KVAs)

Krishak Vikash Association (KVA) is an association of landowners of a sub-project formed for the planning, evaluation, marketing, operation, and maintenance of project farms related interventions. They are registered under Cooperative Society Act 2006. All the people above the age of 18 whose farms are totally or partially within the command area of the sub-project are eligible to become a member of the KVA.

All KVA members are required to pay a one-time deposit membership fee and a monthly institutional development fee as decided by its General House (GH). GH of the KVA will comprise of all its members. All the members have the right to vote and 2/3 of the total members must be present. In case 50% attendance is not fulfilled, the secretary will call another meeting within 15 days in which 50% attendance is essential. In case this is also not fulfilled, then the President will call another meeting within 15 days and the strength on that day will be considered for conducting the meeting. The GH will meet once a year and will have the power to elect the members of the committee for the management of KVA activities, select the members of the Social Audit/Accountability Committee, accept or reject the annual accounts and audit report, and review and decide on issues related to functions and operations of KVA.

The KVA will also form a Management Committee (MC) to carry out its day-to-day affairs comprising of the following members:

- President
- Vice-president
- Secretary
- Joint Secretary
- Treasurer
- Other members

The total number of MC members must be within 5 to 11 of which 1/3rd shall be women and at least one member should be from scheduled caste or other backward class. Government, semi-government, or public corporation employee are not allowed in the MC. The period of the MC will be for 2 years after which re-election will be held. 1/3rd of the members shall retire by rotation each year.

O&M Roles and Responsibilities of the KVA

Operation and maintenance of the respective irrigation scheme is one of the key functions of the KVA. The MC should prepare a plan and program for adequate and equitable water distribution to all the concerned farmers in the command area of the scheme. Moreover, they should also establish a practice of preparing an annual budget and maintenance plan and develop mechanisms and procedures for carrying out the maintenance works. The MC should also monitor the works through its members or assigned staff and ensure prevention of wastage, misuse or unauthorized use and take action against cases of theft, misuse of water and damage to infrastructure. It should also decide on the water tariff on irrigation to be levied on the water users and be responsible for generating the necessary fund for its institutional development. The MC shall also ensure that the cash book is properly maintained and signed by the treasurer.

2.1.2 Farmer Interest Groups (FIGs)

Farmers' Interest Groups (FIGs) are self-managed, independent farmer organizations formed to jointly address production and market issues and provide pooling of resources to enhance the income of the concerned group of farmers. It is not a legal body, but all the members share common goal and interest. All interested farmers above 18 years residing in the village can be members of the FIG. One member from each household may be considered as a member of FIG and no one person can be a member in more than one FIG. The number of members in a FIG is between 15 to 20.

There will be a leader and representative for each FIG. FIG should choose their leader. It is always better that the leadership is rotational. It is also to be remembered that there should be sufficient time for the leadership to work before they changed. The executive body of the FIG has the mandate of smoothly conduct all the activities per the objective of the FIG. It will comprise of a group leader, deputy group leader, secretary, treasurer and record keeper. The members work together to achieve this goal by pooling their existing resources, gaining better access to other resources and to share in the resulting benefits.

Keeping the functions of FIG, area will be covered in a contiguous land patch of 20 farmers and these 20 farmers will form a potential FIG. Periodic meeting and constitutions at the village level is a must to keep the community informed about the interventions. At least one meeting a month and minimum 12 meetings per year must be conducted at FIG level.

Even though the FIGs is not legal bodies, they do get informal recognition from the agriculture and horticulture departments and their role in acting as collaterals through group pressure for loans linking with local governments for better access to public benefits is well recognized among the farming communities in India.

FIG must maintain a set of records related to membership register, proceeding register, financial transaction with signature of all members. Admission, removal, and resignation of members can formally be done at the FPO level. These can be recommendations from FIG, but the decision must be taken by FPO level.

The contribution and role of FIG member's vs benefit that he or she gets being members in FIG must be clearly communicated in a convincing way. It is better to clarify on member disqualification criteria also at the time of member mobilization itself. Any FIG member with a valid pan card can invest in FPO.

O&M Roles and Responsibilities of the FIGs

The project shall provide different relevant facilities to the FIGs formed under it depending on their area of interest. It shall be the responsibility of the concerned FIG to properly operate and maintain those facilities for the intended purpose and obtain the optimum benefit from it. For this purpose, the FIGs should prepare individual plans and programs of activities in their area of interest. They should maintain the common infrastructure like farm ponds, borewells, tractors and other equipment which cannot be afforded by individual farmers but can be owned by the group. They should also carry out proper planning to ensure optimal production with due consideration to household food security needs and the market demands. They can even play the role of linking with the local government at panchayat level to access agriculture and rural development funds. Additionally, for the benefits of the concerned group they can also contribute towards information sharing and capacity building in the topic of their interest.

2.1.3 Self-help Groups (SHGs)

SHGs are informal, unregistered entities formed by people who come together to find a way to improve their living conditions. They are generally self-governed and peer controlled. People of similar economic and social backgrounds generally associate with the help of any NGO or government agency and try to resolve their issues and improve their living conditions. Common Interest Groups can be formed at the subproject level. It will be based on the activities adopted by the target farmers, which may be: dairy farming, bee farming, sheep farming, goat farming, and fish farming. Networking among the common groups can lead to cluster formation and the federation of livelihood support activities.

Its members may be 10 to 25 between the ages of 18 to 50 and one member from one family. The Executives of the SHG are Pradhan, Up Pradhan, Secretary, Treasurer, and other members.

BPMU staff will organize and form at least one SHG in each sub-project. Already existing SHGs may also be considered. These SHGs will be selected based on needs, vulnerability, and present status of the activities (check the amount of savings, credit, and no of meetings conducted). Target farmers will be SC, ST, landless, BPL, single women etc.

BPMU staff will encourage, guide, and organize the target farmers in forming, storming, norming and performing stages of activities and taking up mushroom, dairy, fishery, bee farming, and service sectors under livelihood support activities. This will lead to increased income for target beneficiaries and their families, provide them with sustainable livelihoods, increase their self- confidence, enable them, and particularly single women, to become financially viable and independent.

Project staff will empower the SHGs to maintain environmental sustainability with the convergence of line departments (natural resources: water, forest, flora, pasture, and fodder) for the continuity of livelihood support activities.

BPMU level staff will help the SHGs open bank accounts. Bank linkages are the key strategy for delivering financial services to the poor in a sustainable manner. BPMU will monitor the assistance that will be provided to SHGs under the livelihood support activities. Impart training and exposure visits for the capacity building of the target farmers.

SHGs try to build the functional capacity of poor and marginal sections of society in domain and income generation activities, offer collateral free loans to sections of people that generally find it hard to get loans from the banks, and resolve conflicts through mutual discussion and collective leadership.

They are an important source of microfinance services for the poor and encourage the habit of saving among the poor.

The project will enhance the capacity of the self-help groups through basic and skill development trainings and exposure visits to successful sites of other projects from time to time. This will sustain the human capital. BPMU will ensure the proper functioning of the working of SHGs and CIGs organizations and institutions that are developed as part of the project.

BPMU will explore the linkages of dairy, sheep, goat, fish farming and beekeeping with the existing market channels like, FPOs, of concerned activities. Groups can achieve financial stability with these linkages. Besides this, groups will financial empowered themselves by collecting membership fee, interest on loan, convergence with the line department, NABARD for sustainability.

O&M Roles and Responsibilities of the SHGs

Based on selected field of work of the SHG like bee farming, dairy farming, sheep farming, goat farming, fish farming, the project shall provide relevant facilities and support to the SHGs. The concerned SHGs will have the responsibility of properly operating and maintaining those facilities to obtain the optimum benefit from them. For this purpose, the SHGs should prepare individual plans and programs of activities to maximize the incomes of the farmers through proper market links. For the benefits of the concerned group, they can also contribute towards information sharing and capacity building in the topic. Moreover, for the farmers who may need additional funds, they can even act as collateral through group pressure for loans

2.1.4 Farmers Produce Organizations (FPOs)

A Farmer Producer Organization (FPO) is an organization formed by groups of producers for either farm or nonfarm activities. The FPO will be created at BPMU and DPMU depending upon the producer's consideration of the demand potential to adopt a value chain approach to enhance farmer's producer's economic and social benefits. These FPOs will be registered under Cooperative Society Act 2006 or Indian Company Act.

FPO elaborates the business plan, including the design of the collection center, with the support of outsourced experts. One FPO will consist of around 300 farmers who will be members of KVAs. FPO will deal with the business activities related to agriculture under KVAs. KVA will have autonomous candidates at the beginning based on the motivation of farmers to participate in FPO. The BPMU level KVAs producer will be the shareholder of the FPO.

The aim of the FPO is to maintain a stable supply of agriculture produce in terms of quantity and quality, increase the value addition of agriculture produce (sorting, grading, packaging, and processing) collect and process market information for making a business plan, operate a business plan, manage an organization, finance, and accounting, and ensure better income for the producers through an organization of their own.

There are two types of FPOs: community-based resources-oriented FPOs and commodity- based market- oriented producer organization. A group of farmers with at least 10 members can form an FPO. It can have as little as 200 members up to 500, and the minimum operational areas of the FPO should depend upon the members of the FPO.

It is a registered body that works for the benefit of farmers. It deals with business activities related to the primary produce or products. A part of the business profit is shared amongst the producers. Farmers should be shareholders in the organization.

The following requirement must be met to become a member of FPOs:

- S/he must be a resident of the area of operation.
- S/he must be a member of a KVA.
- The members of any one FPO should be the farmers cultivating similar crops.
- S/he should not be a member of any other similar FPO.
- S/he should be of good character.
- S/he must fulfil all other conditions of membership led down in the act, the rules, and the bylaws.
- S/he may be an agriculturist, horticulturist, or be in the profession of sericulture, dairy farming, fish farming, poultry and beekeeping or any other agriculture and allied activity subservient to the object of the FPO in the area of operation.
- Her/his interest should not conflict with the interest of the FPO.
- No person should be eligible for admission as an ordinary member of the FPO if:
 - S/he has been adjudged by a competent court to be an insolvent or undercharged insolvent and does not genuinely need the services provided by the FPO.
 - S/he has been convicted of any offense under the act.
- S/he must pay the admission fee, must have purchased minimum one share, and paid the value thereof in full.

Accounts and records of the FPO should be maintained in the forms under specific acts, rules, and bye laws. They must be audited by an auditor at least once each year as per the provisions of the act. The remuneration of the auditors shall be paid by the FPO at the rate as fixed by the competent authority under the rules from time to time.

Structure and operation of FPO:

- General Body shall comprise of the members of FPO.
- Executive Body shall comprise of two farmer representatives per KVA and Farmer Interest Groups (FIGs).
- Board of Directors shall comprise of Chief Executive Officer (CEO) and professional staff-responsible for planning, implementation, and monitoring of the FPO.
- Local resource person: shall be people engaged in information collection through survey on input requirement estimate production.

The FPOs are formed at the initial stage through the intervention of the project in areas where awareness raising, and capacity enhancing is necessary for the farmers. A collection centre will be made after formulating FPOs along with their business plan. The project will support FPOs in terms of business management plans, infrastructure development, and financial access by creating corpus funds to fulfil the needs of FPOs by the time they acquire sufficient credibility to borrow from other financial institutions. FPOs shall be mobilized and empowered as a federation of village based KVAs. FPO is a core unit in the development of clusters of agricultural marketing and processing industries.

FPO will provide the following services:

- Organizational services: organizing farmers, capacity building, and catalysis collective action

- Production services: input supply, facilitation of production activities.
- Marketing services: transport and storage, processing, marketing, market information and analysis, certificate, and branding.
- Financial services: saving, loans, financial management.
- Technical services: research, education, and extension.
- Extension services: Business skills, production.
- Management of resources: water, land, forest.

O&M Roles and Responsibilities of the FPO

The FPOs also have an important role in making the optimum use of the agriculture produce related facilities developed by the project and operating and maintaining those facilities for that purpose. For this, each FPO should prepare a plan and program of activities related to the specific farm produce so that smooth market links can be established and maintained. In the process they should also establish necessary links with the concerned FIGs and SHGs.

2.2 Relevant Government Agencies

2.2.1 Local Governments

The concerned local governments also have a key responsibility in operating and maintaining such public properties. However, their responsibility extends to all sector of public infrastructures at the local level. Hence, their thrust towards irrigation infrastructure may be limited due to fund constraint. However, resources available at the local government level will always remain as helpful resort for small financial assistance when the KVAs run out of sufficient funds. The management committee of the KVA can approach their concerned local government for financial support. However, if the local government does not have the required funds, they can also approach and apply for available funds in the line agencies such as Rural Development Department dealing with watershed development projects under irrigation projects under JSV or DOA. MGRNEP funds can be used for desilting of repairing water diversion and water harvesting structures or desilting of channels.

2.2.2 Department of Agriculture (DOA)

It goes without saying that the Department of Agriculture, Government of Himachal Pradesh also has an important stake and responsibility in the operation and maintenance of the project facilities. In total, 296 sub-projects are planned to be constructed by the project and 10 sub-projects rehabilitated by the project during this project period. It is imperative that all the physical facilities developed the water sources of all these sub-projects be properly preserved. Both the ownership and O&M responsibilities of these works lies with the DOA. Minor repair may be expected from the beneficiaries but in the case of natural calamities and major damage, the DOA will have to shoulder the responsibility.

2.2.3 Jal Shakti Vibhag (JSV)

Similarly, as the state government agency responsible for the irrigation sub-sector, the Jal Shakti Vibhag (JSV), also has an important responsibility in ensuring that the operation and maintain of all the irrigation schemes in the province. Due to budget limitation, it is quite understandable that the department may not be able to fully take up this full responsibility of operating and maintain all the irrigation schemes completed by the project. Works within the capacity of the KVA shall be carried out by the KVA. However, if the works are beyond their capacity, the management committee of the KVAs can also approach the nearest JVS office. The merit of approaching the JSV office is that they have the professionals with the expertise in the irrigation related works. In this concern, it is even suggested that

some lift irrigation scheme which the KVAs find to be technically challenging for them to operate and maintained should be handed over to the JVS so that they can assign their field level staff to carry out its operation and maintenance.

2.2.4 Other Line Agencies and NGOs

If the KVAs in any irrigation scheme are not in a position technically or financially to operate or maintain their irrigation scheme, the option also exists for them to approach other line agencies and NGOs. Depending on the nature of the support required, the management committee of the KVA can seek support and apply for support from projects in other line agencies. For example, the Forestry Department (FD) sometimes has funds for watershed development. They may be ready to support some source conservation or catchment area protection works. Similarly, even though the NGOs generally do not have funds to support construction/rehabilitation works, they are usually ready to provide capacity development support at the community level. In this way, the KVAs can also utilize these supports to capacitate them for operating and maintaining their schemes.

3. PLANNING FOR OPERATION AND MAINTENANCE

Proper execution of operation and maintenance of project facilities demands proper homework in terms of planning. This chapter describes some of the preparatory work necessary for the operation of the irrigation schemes as well as for the other facilities. This is an effort towards making improvements in the current ad-hoc mechanisms in which the farmers are generally operating and maintaining the irrigation scheme in the state. Since this endeavor also includes some technical computation, it is urged that the technical staff of the DPMU and BPMU should guide the KVA in the beginning and later leave the task to be continued by the KVA.

3.1 Development of Operation Plan for Irrigation Schemes

The process of planned operation of the irrigation schemes begins with accurate coverage of its command area and proposed cropping pattern. Then, water requirement is assessed based on proposed cropping pattern. Similarly, water availability is assessed based on historic data and experiences. Considering the water availability and requirement, irrigation schedule and operation plan is prepared to distribute water as per the demand of the users (*Warabandi*). A simple diagram that illustrates the whole process has been shown in **Figure 2**. Details of how to carry out these different steps have been presented in the subsequent sections.

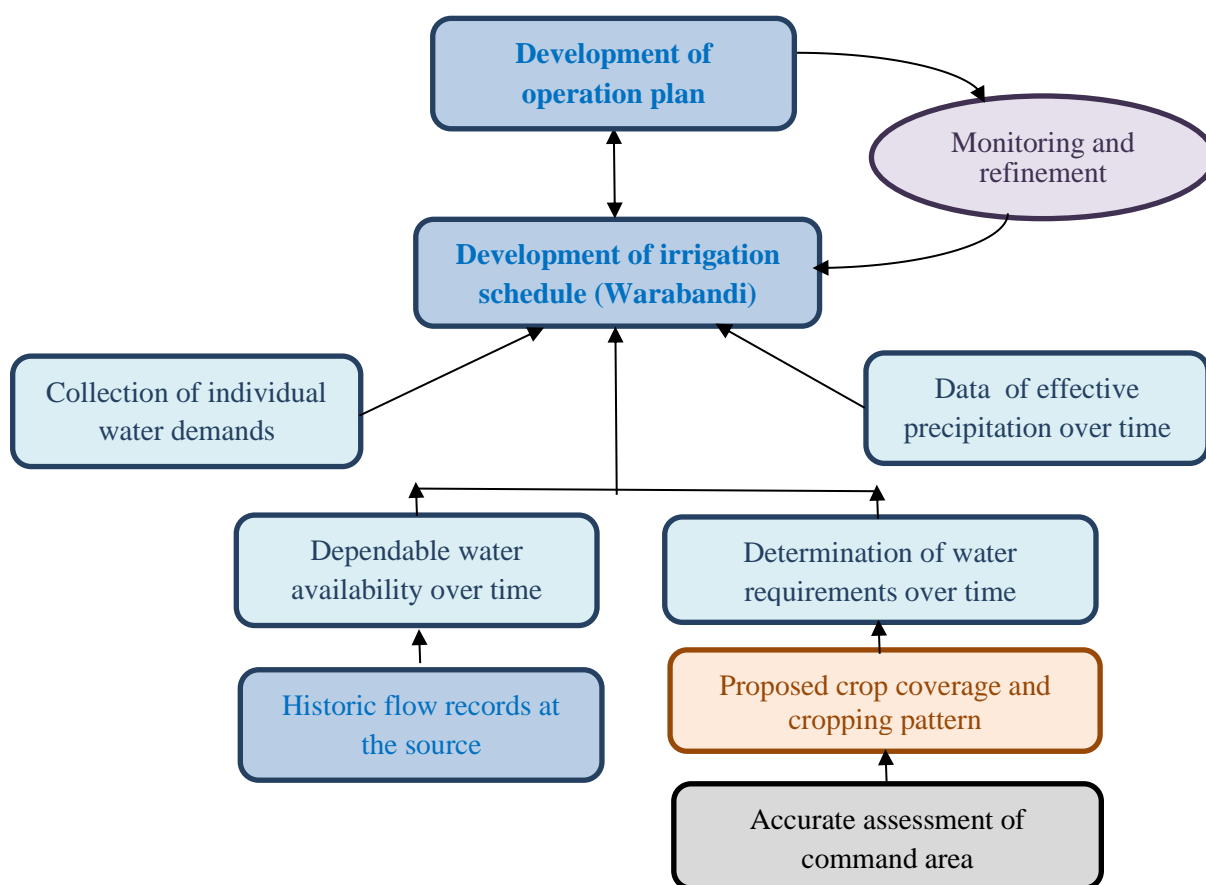


Figure 2: The Process of Developing the Operation Plan

3.1.1 Accurate assessment of command area

Accurate assessment of command area is the first step towards improving operation of the irrigation schemes, irrespective of the type of scheme. Precise records of irrigated area should be collected and regularly updated. Where possible, parcellary maps should be used as a base. It should be

noted that irrigated areas keep changing over time. Some parts may not be needing irrigation as the farmers may decide to leave them fallow while other areas may be left out due to defects in some stretches of the conveyance scheme. It is also possible that farmers extend the conveyance scheme in some parts to expand the command. All these should be considered while making the most accurate assessment of the command area.

3.1.2 Development of irrigation schedule (*warabandi*)

Distribution of water to the farmers' fields includes two distinct steps:

- a) Preparation of the irrigation schedule, and
- b) Planning and carrying out the operation of the delivery scheme.

Irrigation scheduling is the determination of the water distribution pattern of predetermined water requirement to the different areas for a specified period, such as a few days or a week. The irrigation scheduling is simply the compilation of the water demand of the concerned users. However, if there is a shortage of supply (in drought condition), irrigation scheduling needs to be adjusted to that situation i.e. lifesaving irrigation.

The process of preparing irrigation schedule has been outlined below:

- 1) Collect demand forms from all the farmers receiving water indicating the crops they are planning to cultivate and their hectareage.
- 2) Divide the total command area into different blocks from the water distribution point of view considering the channel capacities and grouping convenience
- 3) Select a suitable scheduling time interval
- 4) Identify the cropping pattern and compute the water requirements for each block
- 5) Develop a table grouping the blocks into different groups for water distribution.

It is suggested that before the sub-projects are handed over to the KVA, the concerned BPMU/DPMU should prepare a *Warabandi* roster and train the KVA Management Committee members to prepare the irrigation schedules (*Warabandi*) for their respective schemes. Once they learn this process, they should conduct this exercise before every season. The process has been further elaborated below.

1. Collection of Demand Forms

The first step of the *warabandi* development process is the collection of demand forms from all the farmers receiving water. The demand forms provide the information from the farmers about the crops they are planning to cultivate and their coverage. The water users must fill the demand form and submit it to the Committee for further action and record. A sample of the demand form that the farmers/users must fill in has been attached in **Annexure 3**.

2. Division into Different Blocks

The second preparatory work for irrigation scheduling is the division of the total command area into different blocks. This division into different blocks is carried out from the water distribution point of view considering the channel capacities and grouping convenience. **Figure 3** below illustrates the possible grouping in the layout of typical command areas of irrigation schemes.

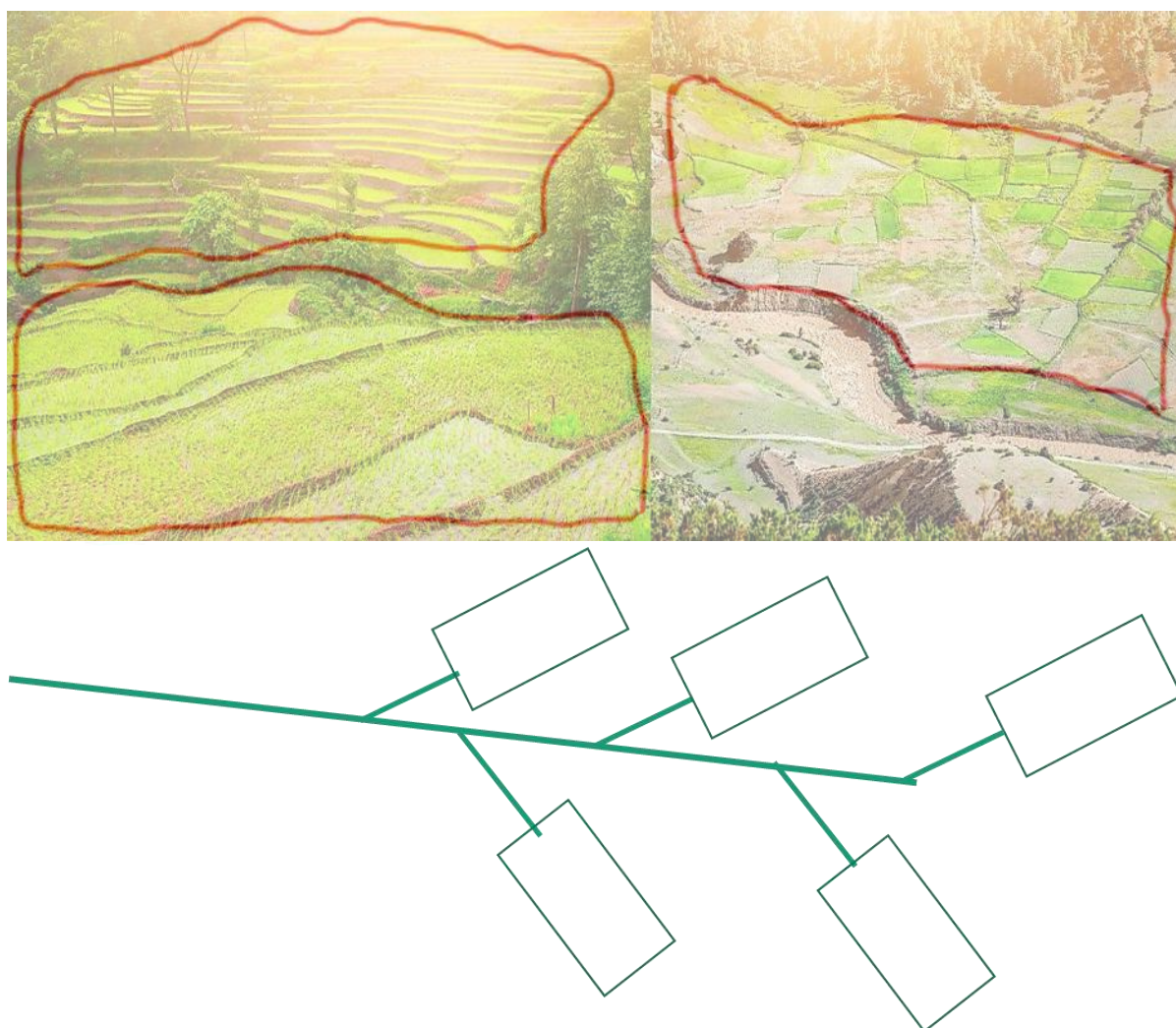


Figure 3: Dividing Command Area into Different Blocks based on Water Distribution

3. Selection of a suitable Scheduling Time Interval

The next step is to select a suitable time interval for irrigation schedule. The frequency of irrigation depends on crop type and their growth stage, climate, soil characteristics, and farmers' practices. The crops in the command area and their growth stage is the first factor to consider for deciding the frequency of irrigation. Different crops need water at different intervals e.g., rice needs frequent irrigations compared to wheat. Hence, the timing of irrigation needs to be decided accordingly. Moreover, there are different stages of crop when irrigation is critical for their growth and production. Critical periods for irrigation for the major crops in HP have been tabulated in **Annexure 4**.

Climate is the other factor that determines the rate and frequency of irrigation application. More frequent irrigation is required on hot days with long sunshine hours, low humidity, and high winds. Similarly, water holding capacity of soils is another key factor for irrigation scheduling. Clayey or heavier soils have more water holding capacity than lighter or sandy soils and medium or loamy soils. Irrigation interval is therefore longer in heavier soils. Finally, farmers' practices for soil conservation and water management also affect crop irrigation requirement. Soil mulching, weeding, and hoeing

reduce evaporation losses and conserve soil water. Similarly, method of water distribution and application techniques also influence the frequency of irrigation.

Considering all these factors, a suitable value of frequency of irrigation interval needs to be made. For the convenience of the HPCDIPP-II field level staff, a table of generalized value of frequency of irrigation for different commonly cultivated crops has been provided in **Table 1**.

Table 1: Generalized Values of Frequency of Irrigation for Different Crops

Crop	Avg. crop season	No. of irr.	1 st irr.	2 nd irr.	3 rd irr.	4 th irr.	5 th irr.	Irrigation Interval	Avg. total irrigation
Frequently irrigated crops:									
M. Paddy	110 days	22	Day 1	Day 6	Day 11	Day 16	Day 21	5-day	110 cm
Cauliflower	85 days	16	Day 1	Day 6	Day 11	Day 16	Day 21	5-day	50 cm
Tomato	75 days	15	Day 1	Day 6	Day 11	Day 16	Day 21	5-day	60 cm
Cabbage	80 days	14	Day 1	Day 8	Day 15	Day 22	Day 29	7-day	45 cm
Sunflower	115 days	11	Day 1	Day 11	Day 21	Day 31	Day 41	10-day	110 cm
Potato	125 days	9	Day 1	Day 15	Day 29	Day 43	Day 57	14-day	60 cm
Radish	50 days	7	Day 1	Day 8	Day 15	Day 22	Day 29	7-day	35 cm
Peas	80 days	7	Day 1	Day 12	Day 23	Day 34	Day 45	11-day	45 cm
Crops irrigated at critical growth stages:									
Wheat	120 days	5	Day 22	Day 42	Day 72	Day 92	Day 112	different	55 cm
Soyabean	110 days	4	Day 18	Day 48	Day 88	Day 98		different	60 cm
Maize	105 days	4	Day 21	Day 44	Day 56	Day 91		different	65 cm
Groundnut	120 days	4	Day 1	Day 52	Day 86	Day 99		different	55 cm
Gram	145 days	3	Day 18	Day 48	Day 92			different	45 cm
Mustard	115 days	3	Day 32	Day 47	Day 65			different	40 cm

The above table only provides a general idea of the frequency of irrigation. The real-world situation is more complicated because a combination of crops is cultivated in the same block and the water delivery should match the requirements of each. Considering the prevailing combination of crops and local context, time interval of 3 to 10 days is generally used. **This is more of a practical judgement and can be refined based on experiences.**

4. Computation of water requirement for each block

Once the blocks are identified, the next step is to compute the cropped area of each crop type in the different blocks. Based on these crop coverages, the water requirement for each block be worked and prepare a water roaster (*Warabandi*)

5. Water Distribution Roaster (*Warabandi*)

The Water Distribution Roaster (*Warabandi*) is already given in the approved DPR of the related Sub-projects. It can be modified as per the need/season/cropping pattern. If there is any drought condition, the roaster can be prepared accordingly.

3.1.3 Preparation of operation plan

Apart from determining the irrigation schedule, additional considerations are required to operate an irrigation scheme. Operation includes the whole process of releasing, conveying, and dividing water in the irrigation scheme to ensure predetermined flows are delivered as per the stipulated irrigation schedule. While irrigation scheduling is more about deciding the water distribution pattern from a users' perspective, operation is more from the management perspective. Moreover, irrigation schedule is generally prepared for shorter periods i.e. for a week, but operation plan is prepared for longer period – generally a crop season or a year. The irrigation schedule can be easily adjusted with the changes in

prevailing conditions. These changes will also affect the operation plan. However, since the operation plan is more long-term, changes in it will also have to be predefined with the related conditions.

Operation should consider several additional factors, including:

- Size of project (ideal length, overall efficiency, etc.)
- Degree of regulation of the sources of water
- Type of conveyance and distribution facilities (open channels, buried pipes, etc)
- Method of water distribution
- Number of fields and cropping pattern
- Number and category of other users
- Quality of the water, mainly the silt content
- Impromptu climatic conditions (mainly, rain showers)

Operation Plan is prepared following the below steps:

1. *Application of appropriate water allocation criteria and procedures*

During situations of water shortage, some compromise and adjustments needs to be made in terms of supplying water as per the crop requirements. Farmers generally have a free choice of their crops and timing of cultivation activity. In some cases, there may be some control from the management on the cropping pattern e.g., restrictions on rice cultivation where applicable.

The other important aspect of formulating an irrigation operation plan is to develop an appropriate water allocation and distribution criteria, through proper consultation and preferably consensus of the water users. In these criteria, the rules for sharing water deficits should be well defined, for example:

- Increasing/decreasing the amount of irrigation water given
- Extending/reducing the interval between irrigation
- Allocating water to preferential crops.

2. *Matching supply and demand*

The whole idea behind preparing the operation plan for any irrigation scheme is to match its water demand with its supply. Since operation plans for irrigation schemes are generally prepared for a crop season or for a year, it is quite evident that it is very less likely that the prior assumed conditions will prevail for the whole planned period. Hence, it is prudent that the plan should also include specific procedures and instructions that apply when anomalies occur in the presumed conditions. These instructions should cover all the relevant operating features.

The exercise of preparing an Operation Plan is generally reiterative and complex, and the complexity varies from case to case. Difficulties arise for the estimation of water distribution ~~propagation~~ time, water use efficiencies, and effect of rain interruptions. Knowledge gained from prior operational experience should be used in refining the estimates. Additionally, to make the plan successful, it is also imperative that it is well discussed and disseminated among the KVAs members and farmers.

Since the irrigation schemes will be handed over to the concerned KVA after the completion of the project and the responsibility of operating the scheme will also go to the concerned KVA. The irrigation Management Committee of the KVA with the help of BPMU/ DPMU shall prepare a plan for the operation of irrigation scheme. A meeting shall be called inviting all KVA member to jointly accept the plan and follow accordingly.

For successful operation of irrigation schemes, the KVAs should consider the following:

- Operation of all water control structures (trash rack, flood control structures, desilting basin, regulation chambers, delivery tanks, outlets/hydrants, sluice valves, etc.)
- In case of LIS/TWIS, suction pipes, delivery pipes, foot valves, sluice valves, non-return valves, common header (where applicable), priming of pumps, fluctuations in the voltage, no over-running of motors, time to time greasing, proper check of nut & bolts, effectiveness of gaskets, timely cleaning of sump wells, to plug the water leakage if any,

3.2 Planning of Maintenance Works in Irrigation Schemes

3.2.1 Types of maintenance work in irrigation schemes

The maintenance works required in any irrigation scheme can broadly be divided into three types namely, routine, periodic and emergency maintenance works. Routine maintenance works are those works that must be repeated throughout the lifespan of an irrigation scheme to keep it functioning. On the other hand, periodic maintenance works are those works that must be carried out from time to time to safeguard the different components of irrigation scheme to ensure its proper operations. These periodic maintenance works can be carried out during the off-season when the farmers and operators (if employed) have spare time. Likewise, emergency maintenance works are works that require immediate action to prevent or reduce the damage to the irrigation scheme.

3.2.2 Preparation of maintenance plan

Rather than doing it on an ad-hoc basis, KVAs can benefit a lot by carrying out the irrigation maintenance works in a planned way. It is explained through a flow diagram in **Figure 4**.

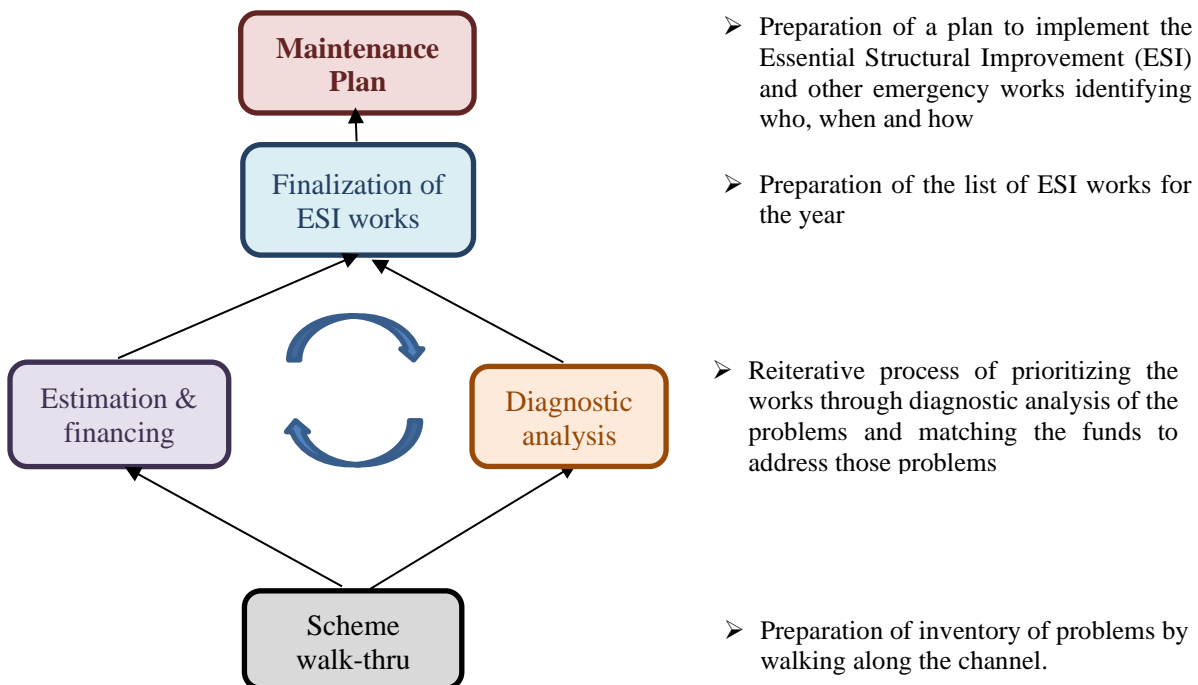


Figure 4: The Process of Developing a Maintenance Plan

Planning of maintenance works in irrigation begins by identifying the problems (bottlenecks) of the scheme. For this, the most suitable process is to walk along the channel (scheme walk-thru) and inspect all the parts of the scheme one by one. An inventory of necessary maintenance works is thus prepared. **Table 2** below shows the format for recording the inventory.

Table 2: Sample Inventory of Maintenance Work

S. No.	Description of maintenance need	Remarks
1	Greasing and repair of trash rack	Regular maintenance
2	Repair of damage of the intake structure	Damaged during floods
3	Protection of downstream scouring/ undermining	Gabion protection/ concrete plugging
4	Desilting basins	Regular desilting of sediment deposits
5	Field Channels	Regular cleaning of silt, foreign material, weeds, etc.
6	Maintenance of civil structures	Regular maintenance whenever necessary.
7

Once the inventory of all identified maintenance works is prepared, the next task is to select the works to be carried out during the current year. This goes through a reiterative process by the KVA of first roughly estimating the costs and prioritizing the works to come up with the list of what can be covered by the available resources considering the needs of the scheme. The financial status of the KVA for maintenance works can be known by keeping systematic record of income and expenditures.

Diagnostic Analysis (DA) can also be carried out to prioritize the works and make the works more cost-effective. It can be carried out during the walk-thru or separately later. DA is carried out by the KVA. Wherever possible, KVA should take the support from technical staff at the local government or line agencies. The team will examine the problematic spots of the irrigation scheme that are restricting its operation and explore their causes and magnitude, ranking the effect based on priority. The team try to identify the most appropriate and cost-effective solutions to the problems through joint discussions.

Essential Structural Improvement (ESI) works to be implemented for the year are identified to include all regular and deferred maintenance while after allocating about 10-20% of the total maintenance budget for emergency maintenance.

Once the ESI list is finalized, the annual maintenance plan is prepared. The maintenance plan should include details of maintenance works, timing, and resources for carrying out the works according to their importance for the scheme. Since annual maintenance works like channels desilting and major intake repair works are carried out through communal collective works based on their landholding size, cost of such works should be estimated based on the number of farmers participating in such jobs. Since skilled human resources may be required for some specialized jobs such as concrete or water gates repairs, they must be planned accordingly. Thus, the required resources both in terms of labor and cash is determined and planned collectively in advance. This will make it very convenient for the community to execute the required maintenance works.

3.3 Planning for O&M of Other Project Facilities

Apart from the irrigation schemes, the other facilities like access roads, building, etc. developed by the project also needs to be properly operated and maintained. This responsibility will go to the institution to which these are handed over. Before the handover process, the project will carry out the necessary capacity building activities so that they are capacitated to do it. They should also be supported to plan for the O&M of such facilities.

4. OPERATION AND MAINTENANCE OF FIS

4.1 Operation of FIS

To obtain full benefits from the FIS, it is imperative that the FIS should be properly maintained and operated. The following functions need to be carried out for proper operation:

- Water allocation: the task of allocating the available water to the different branches of the channel network.
- Water distribution and grievance redressal: the task of distributing the water to the different users (outlets). This task also includes the associated efforts of addressing the demands of the farmers and any grievances that may arise if any farmers do not receive the desired amount.

The following sections describe these operation functions.

4.1.1 Water allocation in FIS

The Management Committee of the KVA with the help of BPMU (DoA official after the completion of project) shall prepare a *warabandi* chart keeping in view as approved in DPR. Before every crop season the KVA will call a meeting of its member farmers, and they will jointly discuss and decide upon the type of crop which they will sow on their field in the coming season.

Allocation of water to the farmers be done based on actual water requirement. The farmers will regulate the use of water among the various outlets under its area of operation to promote economy in use of water allocated and monitor flow of water for irrigation.

After the estimate for water consumption is prepared, then a consensus is to be reached between the member farmers on distribution of water and the KVA shall at the beginning of every irrigation season and, especially, before each kharif and rabi season convene a meeting of the General House to discuss, deliberate and decide on the quantum of water available and the method of its distribution among the members and will fulfill the requirement as per availability of water. Priority shall be given to the farmers who opt for diversification to cash crops.

There may be instances where the water allotted to a particular farmer under the water distribution plan is not availed by the farmer. To avoid the loss of water unused, the KVA may introduce a scheme of registration of demand for additional water by any member who is desirous of utilizing water that remains unused. This register of demand may be maintained with the pump operator or at the KVA office, and in the event of allotted water not used by any specific farmer; it can be re-allotted to those farmers who have registered their demand for additional water on first come first serve basis.

4.1.2 Water distribution and grievance redressal in FIS

To develop the water distribution plan, the KVA may consider the guidelines stated hereinafter:

- (i) The quantity of water that each cultivator shall get is proportional to his/her land holding irrespective of the crop grown.
- (ii) However, while preparing the water distribution plan, it must be ensured that the tail end farmers first get the share of water. The length of the water course to be maintained by the farmers is proportional to their holdings. Also, the fill time and travel time shall be taken into consideration while calculating the water share timing. Each farmer shall get water as per predefined schedule.

To ensure effective water distribution, the KVA should follow these guidelines:

- i. The main channel points shall operate at supply levels that would allow distributary channels to operate at their capacity or as per water requirement of the CCA to be irrigated.
- ii. Only “authorized” outlets shall draw their allotted share of water from the main/distributary/field channel at the same time.
- iii. Outlets when ungated shall deliver a flow of water proportional to the command area.

4.2 Maintenance for FIS

All three types of maintenance works (namely routine, periodic and emergency maintenance) need to be performed in an FIS. The procedure of different types of maintenance works of FIS are outlined here.

4.2.1 Routine maintenance of FISs

In FIS where water is used with the help of gravity, the following activities are daily routines and do not require special skills:

- Maintaining the diversion and intake structures: The head weir which is constructed for accumulating and controlling the flow of water into the irrigation scheme is generally made of Reinforcement Cement Concrete (RCC). However, some temporary arrangements are generally made using locally available materials like boulders, bamboo studs, thatch, etc. for channelizing water towards the intake, which is the entry point for water into the irrigation scheme. These temporary arrangements need routine maintenance. When water is not needed for irrigation, there is no need for such arrangement. However, during irrigation period, especially during dry spells such arrangements are very crucial. Hence, proper planning and assignment of work must be done prior to each irrigation season. Generally, the *kohli*/farmers will be responsible for making such arrangements.
- Removing vegetation and other trash: Growth of vegetation occurs along the channels and in the vicinity of irrigation structures. Similarly, other trash like tree leaves and plastics etc. also get into the irrigation scheme. These vegetations and trash tend to reduce the flow of water in the channels and disturb the hydraulic functioning of the irrigation structure. Hence, they need to be regularly cleaned so that the irrigation scheme can be smoothly operated, and water can be distributed to the farmers’ field as desired. The responsibility of this work on a regular basis primarily lies with the *kohli* but all members of the KVA will be responsible for removing the vegetation and other materials from sides/embankments, water channels (*kuhals*) and drains before each crop season. It is suggested that this task be carried out by the first week of every month and that the KVA should set the day for it. Once it is completed, one MC member should inspect and record it in the Record Register.
- Removing silt from intake structure: Since all irrigation schemes are proposed on natural streams, it is very likely that some silt will get deposited upstream of the diversion structure (head weir). This silt shall be removed on quarterly/need basis. The same kind of mechanism, as mentioned above, will be developed for removing the silt from desilting basins, regulation chambers, outlets/hydrants, storage tanks and flushing of pipes.

A Maintenance Log will be maintained to document all these routine maintenance works. This log will maintain record of the type of routine maintenance work including the dates on which it was conducted and by whom. Comments received on the task shall also be recorded. This record shall be

checked and signed by the President of the KVA. The template of Maintenance Log for routine maintenance works in FIS has been attached in **Annexure 5** of this manual.

4.2.2 Periodic maintenance of FISs

The following types of activities fall under periodic maintenance in an FIS:

- Repairs of head weir: The head weir or check dam structure will need repair after some time. This task can be done during off season or when there is less water in the source. The Management Committee shall be responsible for this task. It is suggested that the MC should call a meeting prior to the need of such periodic maintenance and make a proper plan for carrying out such work. They can decide on whether to seek help from other members or get the works done through a contractor, depending on the nature and complexity of the work.
- Repairs of water regulation gates: Gates are generally used in irrigation structures for controlling and regulating water and diverting it to the different users as required. These gates need to be repaired from time to time. Greasing and oiling needs to be done to the moving parts on regular basis and some parts may also need to be replaced after wearing and tearing. This task is also generally performed by the Management Committee through a contractor or can also be carried out with the help of *Kohli*/farmers, depending on the nature and complexity of the work.

A maintenance log will be maintained to document all these periodic maintenance works. This log will maintain an up-to-date record of all works including the dates on which it was conducted, by whom it was conducted, and how much cost occurred. All comments received on the task shall also be recorded. This record shall be checked and signed by the President of the KVA. The record for periodic maintenance works for FIS may be maintained in the form set out in **Annexure 6**.

4.2.3 Emergency maintenance of FIS

Emergency maintenance works in FIS may include the following:

- Repair of head weir/intake structure: Due to flash flood or other reason if the structure is damaged partly or completely, then it should be repaired so that water distribution to CCA should not hampered.
- Emergency operation of water regulation structure: If due to heavy rain, water is overflowing to the farms and destroying the crops, then on emergency basis sluice gate of the head weir should be opened so that the excess flow can be safely diverted from the farms.
- Repair of damage due to natural disasters: If the irrigation scheme is damaged unexpectedly during any natural disaster, then all damages like floods, earthquakes, or storms, will have to be repaired on emergency basis. The Management Committee shall evaluate the whole damage and prepare a preliminary report and explain to all members of the KVA. After that, estimate of expenditure and other resources required to repair the damage shall be prepared. Emergency work expenses will be collected from each member of the KVA, as required, after considering subventions, if any, received from the State Government.

A separate maintenance log will be prepared for such emergency maintenance works. This log will maintain record the dates on which the emergency maintenance was conducted, the nature of the work and the people engaged in it. Comments received on the task shall also be recorded. This record shall be checked and signed by the President of the KVA. The template of the Emergency Maintenance Log in FIS and Operation record of FIS have been attached in **Annexure 7** and **Annexure 8** of this manual.

5. OPERATION AND MAINTENANCE OF LIS

Lift Irrigation Scheme (LIS) is an irrigation scheme in which water is lifted with the help of pump up to a certain height and then water is used with the gravity. The pumping is generally done by electric pumps but in some cases solar pumps have also been used.

5.1 Operation of LIS

Operation of LIS refers to timely and daily operation of all the components of the LIS such as pumping scheme (pumps/motors/accessories), rising mains/ gravity mains, distribution system, storage tanks/distribution chamber etc. An LIS is designed and installed as a permanent solution to irrigate areas in higher elevation that is not possible to be irrigated by gravity flow. The estimated life span of the LIS can be assured and even increased by closely following the planning and implementation procedure as suggested in this manual.

5.1.1 Preparatory works for operation of LIS

The procedure for preparation of operational plan is almost same as for FISs. The major difference is that since the LIS also needs more mechanical/electrical parts, rising mains, distribution pipelines etc., proper checking is necessary before the scheme goes into operation. Before turning on the pump, following checking should be done:

- i. Check that system is workable before the start of season.
- ii. Ensure that all regulating units are closed except outlets where water is needed on demand based.
- iii. Inspect all mainline, lateral, and turnout valves. The first and last risers on each line, that is at a high point in the line, should be opened to release the air.
- iv. Inspect that the foot valve in the suction pipe is fully operational.
- v. Before turning on the pump, the valve should be opened at slow rate so that desired pressure is build up in the pump.
- vi. After the rising main pipe is filled with water, slowly open the valve so that the rising main is filled with water.

5.1.2 Monitoring works during irrigation season

Proper surveillance needs to be maintained throughout the period of operation of LIS. The following parameters must be closely observed and checked:

- i. Inspect the pipeline inlet daily or more often if necessary. Remove trash or debris.
- ii. Check pressures regularly. A change means there is probably an operational or maintenance problem.
- iii. Inspect flow meters at least monthly for proper operation.
- iv. Check pump and valves for noisy operation. Noise is an indication that cavitation may be occurring. Cavitation can greatly reduce the life of the pump and valves.
- v. Check that air-vacuum valves are seated and not discharging water.

5.2 Maintenance in LIS

Maintenance works for LIS is the act of keeping the structures, plants, machinery, equipment, other facilities, and ancillary requirements in an optimum working order. It includes replacements, correction of defects, prevention of breakdown, etc. In an LIS, maintenance of pumps, pipe network, gates, valves, metering devices, civil structures etc. are very important.

Generally, maintenance instructions are available from manufacturers, pump users' associations and other technical organizations. For most engine or electric motor driven pumps, checks and inspections are for noise, vibration, leakage, temperatures of bearings and windings, fuel/power consumption, capacity, and output (water discharge and dynamic head), ventilation screens etc. Special care should be taken to protect pumping units from moisture that can accumulate inside the machines and cause serious damage.

The procedures for routine, periodic and emergency maintenance of LIS are explained below:

5.2.1 Routine maintenance of LISs

The following are some of the routine maintenance works required in LIS to keep them functioning:

- **Removing vegetation and other materials:** All members of the KVA will be responsible for removing the vegetation and other materials from embankments, channels and drains. This activity is needed on routine monthly basis throughout the year. All members will be divided into groups and the Management Committee of the KVA shall assign this task to all groups turn by turn for the whole year. First group of farmers will do the task during first month and then second group in the second month and so on. One week (first, second, third or fourth) of every month will be fixed for the assigned task and concerned group will decide the day within that month to do the task and inform the KVA. After completing the task one member of the Management Committee shall inspect the irrigation schemes and record the task completed in Record Register.
- **Lubrication oil or greasing the prime mover (electric motor):** The Prime mover is needed to be lubricated or greased regularly. As per the maintenance book of electric motor, the KVA will make necessary arrangements for this task. The activity will be accomplished and inspected as per schedule. It is to be performed on quarterly/need based. It will be recorded as well.
- **Pump station inspection and pump test:** Evaluation includes a visual inspection of the Starter Panel, Electric Motor, Pump, and related pump scheme components. Running tests include Amp/Voltage readings and scheme pressure checks. This basic inspection can be utilized as the first line of defense in preventing major problems before they occur. This can be used to determine the overall performance of the pump. This task will be performed on monthly basis (even during the off-season) by the pump operator and inspected by one member of the Management Committee and recorded. Pump Test includes the Pump Station Inspection and measurement of the flow and/or pressure at different rates. This can be used to determine the overall performance of the pump. This task will be performed on monthly basis (even during the off-season) by the pump operator and inspected by one member of the Management Committee and recorded.
- **Checking of electric wiring:** The pump operator will check all the electrical wiring. The record of this task will be prepared on quarterly basis by the operator. The task will be monitored, inspected, recorded by one member of the Management Committee.
- **Repairing of water hydrants:** The hydrants are used for diverting water for use by different farmers in different direction, will also need repair after some time. Small repair shall be done under routine maintenance. This task will be performed by the operator with help of other farmers and/or contractor. Generally, this task will be carried out by hiring a local mason or local contractor. The task will be performed as per requirement.

To ensure that the pipes do not choke with silt, minimum prescribed velocities should be maintained for flushing the pipes. During the first irrigation, scour valves must be opened to scour out deposited foreign materials. Similarly, joint and valve leakages should be attended promptly to avoid wastages. Frequently used fittings should be kept spare for repair. Moreover, the right of approach to the field should be maintained and entry should be allowed at any time with prior notice. The record for routine maintenance works in LIS may be maintained in the form set out in **Annexure 9**.

5.2.2 Periodic maintenance of LISs

The following are some of the periodic maintenance works essential in LIS to ensure their proper operation:

- **Removal of silt:** The silt/debris deposited in the water bodies i.e, head weir, percolation well, intake chamber etc., sump well, chambers & MDT needs to be removed from time to time. This task can be taken up during off season. The Management Committee shall be solely responsible to do this task with the help of other members or through a contractor. The task will be performed as and when required.
- **Repairs of water regulation structures/valves:** The water regulation structures which are used for diverting water for use by different farmers in different direction, will also need repair after some time. This task will be performed by the Management Committee with the help of other farmers or by hiring a local mason or local contractor. The task will be performed on quarterly basis or as and when required.
- **Service of pump and electric motor:** The pump service should be undertaken regularly for its impellers, foundations, nut and bolt, pump shaft alignment, sluice valve and non-return valve should be regularly checked. Similarly electric motors service will be undertaken on annual basis or after every 1000 hours. The actual timings of service will be modified after purchasing a pump. The service will be performed by the authorized technician of the manufacturer as part of annual maintenance contract. The service will include checking and repairing of leakage, mechanical seal, bearing operating temperature, vibration level, alignment of the motor pump, motor winding insulation, motor windings, lubricating etc. The service shall be monitored, inspected, and recorded by the Management Committee.

To ensure that periodic maintenance works are carried out at appropriate times as required the following checking must be done prior to each irrigation season:

- i. Check pumps impellers for wear and tear. Repair if necessary.
- ii. Re-pack bushes if necessary and lubricate pump timely.
- iii. Suction pipe and its bend should be in proper angle and foot valve should be in working order and no pump should be run without priming.
- iv. Pressure gauge should be in working order.
- v. Check power panel board regularly to ensure that mouse nests and bird nests etc. are not built up.
- vi. Trash rack should be regularly cleaned and repair it if necessary.
- vii. Check civil structures and pipeline network for damage and repair it as needed.

Likewise, during winter season, the following precaution need to be taken for winterization:

- i. Check the suction line leakage, efficient working of foot valves.
- ii. Drain the pump. If the pump needs maintenance, do it.
- iii. If sediment build up in the line is a problem, flush the pipeline.

- iv. Close and lock the inlet structure gates and crack open all turnouts located at high points in the line and all low-lying turnouts.
- v. In case of frost condition, open all drains and allow the pipe to drain. Flush out all low spots in the pipeline.
- vi. Close all gates, valves and other openings where small animals or water could enter the pipeline.
- vii. Leave drain valves etc., open during the winter in frost condition especially in the high-altitude area.

A periodic maintenance log may be maintained in the form set out in **Annexure 10** to document dates that maintenance was conducted, by whom, and any maintenance related comments about the task conducted. This record shall be checked and signed by the President of KVA.

5.2.3 Emergency maintenance of LISs

Emergency works in LIS may require immediate and joint action by relevant Departments of the State Government and farmers, to prevent or reduce the effects of unexpected adversaries. These works include:

- Repair of head weir: Due to flash floods or other reason if the head weir is damaged, timely action to be taken to repair it.
- Damages due to natural disasters (flood, earthquake or storm): If the irrigation scheme is damage unexpectedly during any natural disaster, then all damage will have to be repaired on emergency basis. The Management Committee shall evaluate the whole damage and prepare a preliminary report and explain to all members of KVA. After that, estimate of expenditure and other resources required to repair the damage shall be prepared. Emergency work expenses will be collected from each member of the KVA, as required, after considering subventions, if any, received from the State Government.
- Damage due to electricity short circuit: If the electricity wiring and transformer is damaged due to short circuit or moist, then the Management Committee shall inform the State Electricity Board Officials. The task will be performed by the technicians of the State Electricity Board. The task will be performed based on occurrence and/ or as and when required.

The record for emergency maintenance works for LIS may be maintained in the form set out in **Annexure 11**. The operation record of LIS is given in **Annexure 12**.

6. OPERATION AND MAINTENANCE OF TWIS/PERCOLATION WELL

Tube Well Irrigation Scheme (TWIS) is an irrigation scheme in which water is extracted from underground through tube well. The Tube wells are mostly electrically powered but, in some cases, also solar powered. There are 28 TWISs sub-projects. TWIS are of two types (1) Shallow Tube well and (2) Deep Tube well. The operation and maintenance of both types of tube wells is almost similar; and, hence, explained below collectively.

6.1 Operation of TWIS

In terms of operation, due to their generally smaller size, operation of TWISs is relatively easy. However, if not done properly, it can still be challenging in terms of management, efficiency, and even delivery of irrigation services. In this regard, poor maintenance, lack of accountability of the tube well operator of the community, domination by local elite, frequent power cuts, delays in repair and procurement of spare-parts, local dispute regarding the right of passage, etc., are amongst the several problems that TWIS suffer from. Small farmers generally benefit from TWISs through improvement in crop pattern, crop yields, and cropping intensity. However, experiences of some TWISs from the first phase has not been very encouraging in terms of water utilization.

6.1.1 Operation of the tubewells

Once the tubewells are handed over, their management responsibility also goes to the KVAs. The reliable quantitative estimates of water availability in the location through pumping test data can help in minimizing the risk of failure of TWISs. The hydrogeological characteristics of the aquifer are quantitatively defined by two parameters: permeability and storage. The most accurate, reliable, and commonly used method of determining aquifer characteristics is by controlled aquifer pumping test. It is designed to impose a hydraulic stress on the aquifer in such a way that measurements of the responses to the stress will fit in a theoretical model of aquifer responses.

6.1.2 Operation at the on-farm level

Following the principles of community management, the KVA are expected to play a key role in harnessing the available groundwater in their area through community decisions. This approach aims to enable the village community to make best use of the available resources. If farmers feel a genuine sense of ‘participation’ in community decisions, they may be much more inclined to comply with them. This has been demonstrated through efficiency and equity water distribution in many community tubewells in India. The basic ‘success’ factors of such arrangements are the small size of the groups and homogeneity in the group members in terms of economic status and landholding, quality of leadership, external support in both leadership, and management. These factors establish a sense of responsibility for the conserving and sustaining the tubewell. It is also important to note that the success of community management largely depends on the cooperation amongst the stakeholders. Their cooperation arises in two conditions: first, if there is a collective gain that is larger than the individual private gains, and second, if the problem of ‘free riders’ can be sought through coercion and sanctions (e.g., imposition of fines on those who violate the agreed rules of water use). Active role of KVA in the operation of the TWIS is also expected to equitable distribution of water as large farmers would not have virtual monopoly of access to this resource.

6.2 Maintenance for TWIS

The routine, periodic and emergency maintenance of TWIS has been described below.

6.2.1 Routine maintenance of TWIS

Routine maintenance of TWIS entails the following activities:

- Removing vegetation and silt: All KVA members are responsible for removing the vegetation and other materials from open channels/drains (*kuhal*). This activity is needed on routine basis throughout the year. All members will be divided into groups and the Management Committee of the KVA shall assign this task to all groups turn by turn for the whole year. First group of farmers will do the task during first month and then second group in the second month and so on. One week (first, second, third or fourth) of every month will be fixed for the assigned task and concerned group will decide the day within that month to do the task and inform the KVA. After completion of the task, one member of the Management Committee shall inspect the irrigation schemes and record the task completed in a Record Register.
- Inspection of submersible electric pump: This includes pump inspection and measurement of efficiency/ flow and/or pressure. This can be used to determine the overall performance of the pump. This task will be performed on monthly basis (even during the off-season) by the pump operator and inspected by one member of the Management Committee and recorded.
- Repair of electric wiring: The pump operator should check the electricity wiring scheme. The record of this task should be prepared on quarterly basis by the operator. The task should be monitored, inspected, and recorded by the Management Committee.
- Inspection of Water Hydrants: The hydrants are used for diverting water for use of water by different farmers in different direction, will be inspected by the operator on monthly basis. On an average there could be around 40 hydrants in an irrigation scheme. The inspection will be duly recorded as per standard procedure.

The record for routine maintenance works for TWIS may be maintained in the form set out in **Annexure 13**.

6.2.2 Periodic maintenance of TWIS

Periodic maintenance works of TWIS are generally carried out during off-season by the operator or farmers and for very large or difficult jobs, it may be necessary to hire a contractor. The following works may fall under this category:

- Repairs of water hydrants: The hydrants are used for diverting water for use of water by different farmers in different direction, will also need repair after some time. On an average there could be around 40 hydrants in an irrigation scheme. This task will be performed by the Management Committee with the help of other farmers and/or contractor, depending on the nature and complexity of the work. Generally, this task will be undertaken by hiring a local mason or local contractor. The task will be performed on quarterly basis.
- Service of Electric Driven Pump: The service of electric driven submersible pump shall be undertaken as per the instructions given by the pump manufacturer (number of months or number of hours). For the time being, it is assumed that the service will be carried out on annual basis or after every 1000 hours. The actual timings of service will be modified after purchasing a pump. The service will be done by the authorized technician of the manufacturer as part of

annual maintenance contract. The service will include checking and repairing of leakage, mechanical seal, bearing operating temperature, vibration level, alignment of the motor pump, integrity of motor winding insulation, motor windings, etc. The service will be monitored, inspected, recorded by the Management Committee.

A periodic maintenance log may be maintained in the form set out in **Annexure 14** to document dates that maintenance was conducted, by whom, and any maintenance related comments about the task conducted. This record shall be checked and signed by the President of KVA.

6.2.3 Emergency maintenance of TWIS

The following are the works that require immediate and joint action by relevant departments of the State Government and farmers, to prevent or reduce adverse effects on TWIS:

- Damage due to natural disasters like flood, earthquake, or storm: If the irrigation scheme is damaged unexpectedly during any natural disaster, then all damage will be repaired on emergency basis. The Management Committee shall evaluate the whole damage and prepare a preliminary report and explain to all members of the KVA. After that, estimate of expenditure and other resources required to repair the damage will be prepared. Emergency work expenses will be collected from each member of the KVA as required, after considering subvention, if any, received from the State Government. The task will be performed based on occurrence and/or as and when required.
- Damage due to electricity short circuit: If the electricity wiring and transformer is damaged due to short circuit or moist, then the Management Committee shall inform the State Electricity Board officials. The task will be performed by the technicians of the State Electricity Board as and when required. The task will be performed based on occurrence and/ or as and when required.

An emergency maintenance log may be maintained in the form set out in **Annexure 15** to document dates that maintenance was conducted, by whom, and any maintenance related comments about the task conducted. This record shall be checked and signed by the President of the KVA. The operation record of TWIS is given in **Annexure 16**.

7. O&M OF BUILDINGS AND FARM ACCESS ROAD

7.1 Operation and Maintenance of Buildings

Operation and maintenance of buildings is undertaken to keep, restore or improve the facilities of a structure or building which include housekeeping, civil, E&M services, horticulture, and landscaping to keep the structure/building in good condition and in currently acceptable standards to sustain its utility and value.

The objective of maintenance is:

- (i) To ensure safety of the occupants or the public at large.
- (ii) To preserve building and services, in good operating and habitable condition.
- (iii) To upgrade, renovate, rehabilitate, or retrofit the facilities to improved specifications and standards, where so required.

The expected economic life of the building under normal occupancy and maintenance conditions is taken as provided below:

- (i) Monumental buildings 100 years.
- (ii) RCC Framed construction 75 years.
- (iii) Load bearing construction 55 years.
- (iv) Semi-permanent structures 30 years.
- (v) Purely temporary structures 5 years.

The life of the building mentioned above is only indicative and it depends on several factors like location, utilization, specifications, maintenance, and upkeep/caretaking. This highlights the importance of proper O&M of the buildings. This section describes the procedure for preventive measures, regular maintenance, periodic maintenance, and emergency maintenance.

7.1.1 Preventive measures

Preventive measures are essential to keep the building services in serviceable condition. Preventive maintenance is taken-up so that the services or the assets do not fail due to wear and tear and those components and services expected to fail are replaced well in time. Schematic inspections by all concerned officers are essential particularly of those services and components which are prone to higher wear and tear and nearing to outlive/outlived their life.

All Buildings/structures are required to be inspected twice a year by the JE and once in a year by concerned Engineer to check the visual defects, if any and suggest remedial measures like structural repair, replacement, retrofitting, up-gradation, horticulture works and submit estimates to the DOA or DD.

Cleanliness shall be maintained in and around the building and ensured that malba (garbage) is collected from the workplace and deposited at suitable identified spots, where residents/users do not throw garbage on it. Suitable provision will be made for disposal of malba on continuous basis and not allowed to accumulate / pile up. The arrangements of green and blue dust bins shall be made as per the standard norms. The arrangement for disposal of C&D (Construction & Demolition) waste shall be made separately.

Any leakage from the water supply line, sewers or unfiltered water supply line noticed in and around the building should be repaired immediately. It shall be ensured that sewer lines are not laid over water supply lines and are not in close vicinity due to which there is any chance of getting sewage

mixed into potable water. Thin members are exposed to severe weathering conditions, members affected by leakage/ seepage and members/components affected by water splashes should also be inspected.

Water should not be allowed to stagnate on the roofs, courtyards, roadside or any other place. It shall be ensured that before rains, all roofs, drains, and rainwater harvesting filter media are cleaned properly. In case unhygienic health hazardous conditions are noticed in the portion of areas/service maintained by local bodies, the same will be reported to them and pursued for action. Over-head tanks will be provided with lockable covers and Mosquito proof couplings. The occupants will be advised against storage of water in coolers not in use and apply Mosquito repellents in the Cooler's pads etc. to check spread of Malaria.

The following categories of items also have great significance in preventing maintenance; hence, special attention must be paid in respect of these items also:

- (i) Cleanliness of roofs, inlet of rainwater pipes, *khurra*, *chajja*/sunshade top, outlet of rainwater pipes, plinth protection and drains at least twice a year and particularly before monsoon.
- (ii) Cracks on *gola* and top of parapet.
- (iii) Cleanliness and waterproofing of *mumty* roof.
- (iv) Leakage from terrace tanks
- (v) Damage of water proofing due to installation of various services on roof like Dish antenna, solar panels, etc or weed/vegetation.
- (vi) Cracks on grit plaster, spalling of concrete, cladding stone coming out of substrate etc
- (vii) Leakages/seepages.
- (viii) Rusting of GI pipes and fittings showing seepage/leakage and crack in CPVC pipe.
- (ix) Shafts for the leakage/seepage.
- (x) Sagging false ceiling.
- (xi) Termite affected areas and wooden members.
- (xii) The cleaning of manholes and sewer lines and checking for rainwater getting mixed in sewer lines.
- (xiii) Damaged cables & other abandoned service lines.
- (xiv) Electrical schemes like main boards etc. should be checked annually.
- (xv) Fire services particularly during hot weather and assessment of electric load due to additional services installed.
- (xvi) Whether unprotected heaters in use likely to cause fire incident.

7.1.2 Regular maintenance of buildings

Day to day or routine repairs are the works which are to be attended on the day to day basis such as removing choking of drainage pipes, manholes, restoration of water supply, removing of leakage from water taps / angle valves / pipe joints / overhead tanks, replacement of faulty water taps / angle valves, PVC connections, waste pipe etc., replacement of broken sanitary fittings / fixtures, providing missing manhole covers / gully trap covers, replacement of broken wall / floor tiles, repairs of doors/windows, replacement of damaged door/window hardware, replacement of glass window panes, curtain rod, patch repair to plaster (less than 2.5 sqm), replacement of faulty switches, sockets, drivers/chocks of fittings (except tube light / lamps), repair of fans, replacement of wiring due to accident etc., watering of plants, lawn mowing, hedge cutting, sweeping of leaf falls etc. and other minor routine works required for keeping the building functional and habitable condition. These services are provided after receipt of complaints from the users as well as instructions from department's representative and contractor's representative. This does not include annual repair and special repair

works.

7.1.3 Periodic and preventive maintenance of buildings

The works of periodic nature like whitewashing, color washing, distempering, painting etc. are called periodic maintenance and are generally carried out once in a year through the scheme of contracts. The timing of various items under periodic maintenance is indicated in **Annexure 17**. In addition, works such as patch repair to plaster (more than 2.5 sqm), minor repairs to various items of work such as replacement of damaged soil / waste pipe stack, re-plastering in shafts, Gap filling of hedges/perennial beds, Replacement/Replanting of trees, shrubs, painting of tree guards, planting of annual beds and trimming/pruning of plants etc., which are not emergent works and are considered to be of routine type, can be collected and attended to for a group of houses at a time and particular period of financial year, depending upon the exigency. Such works can be done under regular maintenance also.

7.1.4 Emergency maintenance of buildings

As the building ages, there is deterioration to the various parts of the building and services and major repairs and replacement of elements become inevitable. It becomes necessary to prevent the structure from deterioration and undue wear and tear as well as to restore it back to its original condition to the extent possible.

There are two kinds of emergency repairs

- a) Replacement of various building's elements after expiry of useful life
- b) Major repairs undertaken due to wear and tear of the building

The following types of works in general are undertaken under special repairs: -

- i. Provision of water proofing treatment to the roof. All the existing treatments known are supposed to last satisfactorily only for a period of about ten years.
- ii. Repair of internal roads and pavements.
- iii. Repairs/replacement of flooring, skirting, dado, and plaster.
- iv. Replacement of doors, window frames, shutters, and fittings.
- v. Replacement of water supply and sanitary installation like water tanks, WC cistern, wash basins, kitchen sinks, pipes etc. The life of GI pipes shall be considered as 25 years.
- vi. Re-grassing of lawns/grass plots in 5 to 6 years without replacement of earth and in 8 to 10 years with replacement of earth.
- vii. Renovation of lawn in 4 to 6 years as per site requirement.
- viii. Replanting of hedges in 8-10 years.
- ix. Completely uprooting and removing hedges / shrubbery.
- x. Replanting of (a) Rose beds in 5-6 years. (b) Perennial beds in 5-6 years. (c) Canna beds in 1-2 years.
- xi. Shifting of any garden feature from one site to another within building.
- xii. Electrical Equipment's/ Installations after their useful life as given in **Annexure 18**.

7.2 Operation and Maintenance of Farm Access Roads

Road networks in the subproject area are classified as National highways, State Highways, Major district roads, other district roads, village roads and *katcha* path in case habitations. National Highways are generally of 14m of width bituminous road, State Highways are generally 8m Major District Road is generally 6 m in width bituminous road, other district roads are of 5m width bituminous road and village roads are generally 3.5m bituminous road or brick roads. Maximum dia pipes in the Project is

of size which can easily be laid in shoulders of the roads. In this project beneficiary will contribute up to 10% for Farm Roads.

7.2.1 Maintenance, Repair and Rehabilitation of Cement Concrete Pavements

(Refer IRC: SP: 83-2018 - Guidelines for Maintenance, Repair and Rehabilitation of Cement Concrete Pavements)

Introduction:

Concrete Pavements also known as Rigid Pavements have a relatively long service life, provided these are properly designed, constructed and maintained. This is because concrete pavements are economical in life cycle cost and known to perform better with minimum maintenance. The concrete pavement can serve up to its design service life and even beyond if timely repairs are undertaken. Load transfer mechanism of the concrete pavement is through beam action and accordingly the concrete pavements are expected to perform relatively better than flexible pavements on weak sub grades, as these can bridge small soft or settled areas of sub-grades. The concrete pavement performance in high rainfall areas is found better than flexible pavement due to high resistance to water penetration. Similarly in hilly terrain, concrete pavement is able to resist impact load and abrasion due to braking and acceleration in a better way than flexible pavement.

General:

The repairs of CC Pavements are usually performed by skilled (sometimes specialist) labor. The main types of maintenance required in respect of cement concrete pavements are as follows:

(a) Routine Maintenance: Routine maintenance may be defined as those treatments that are applied to a pavement to keep the pavement functioning properly. As such routine maintenance is sometime called 'reactive maintenance'. This suggests that it is a work that is performed as a reaction to a specific distress. Routine maintenance is performed on pavement as they begin to show sign of deterioration but is generally considered to be a wasted effort on pavement that are severely distressed.

(b) Programmed Maintenance: It covers works undertaken to arrest deterioration and restore the asset to its original condition. Works are programmed in advance and defined to delay further deterioration. It normally includes work such as resealing the defective joint with sealant, cross-stitching, partial depth repairs, full depth and diamond grinding to remove faults in the rigid pavement.

(c) Rehabilitation and Strengthening: It refers to programmed works that are undertaken to structurally restore the condition of a road section to impart further design life to carry future expected traffic loads. The works upgrade the road to current design standards. It includes work like diamond grooving for restoring surface texture, slab stabilization, reconstruction or application of an overlay to rectify structural deficiencies in the pavement, retrofitting of dowel bars and tie bars wherever needed.

(d) Emergency Repairs: It covers responding to complaints or emergencies.

Distress Identification:

A site condition survey once a year, preferably in the beginning of monsoon season should be undertaken to assess the existing pavement condition and to identify the pavement distresses. Such site condition surveys should aim at two objectives: (i) to determine the root cause of pavement's distress. (ii) To track the rate of progression of the distress leading to pavement deterioration.

Distress Types: Distresses in concrete pavements are either structural or functional. Structural distresses primarily affect the pavement's ability to carry traffic load. Functional distresses mainly affect the riding quality and safety of the traffic.

Common Defects and Distresses in Concrete Pavements:

These could be due to poor quality of materials/workmanship/design defects and environmental causes. Manifestation of distress in cement concrete pavements may be classified in the form of:

Cracking:

(a) Plastic shrinkage cracks (b) Crow Foot or “Y” shaped cracks (c) Edge cracks (d) Corner cracks (e) Transverse cracks (f) Longitudinal cracks (g) Diagonal cracks (h) Durability “D” cracking (i) Punchouts.

Surface Defects:

(a) Pop-outs/Small holes (b) Animal/Wheel impressions (c) Scaling (d) Raveling (e) Deep abrasion/scooping of surface (following accident) (f) Polished aggregates/glazing/smooth surface

Joint Defects:

(a) Spalling (b) Sealant failure and/or loss (c) Faulting at joints (d) Separation at joints.

Types of Repair Techniques:

Repair techniques can be broadly classified into two categories:

- i. Preventive Techniques
- ii. Corrective Techniques

Preventive techniques are pro-active techniques/activities. These are aimed to slow down or prevent the occurrence of the distress to ensure a longer service life of the pavement. Joint and crack resealing are the most applied preventive repair techniques. Full depth repairs are examples of corrective repair activities. There are several corrective activities/ repair techniques which perform both the function of corrective as well as preventive repair activities. Diamond grinding, grooving, slab stabilization, cross-stitching, retrofitting of dowel bars/edge drains and retexturing are some of the activities of the repair techniques which act both as corrective and preventive repair activities.

Repair Methodology:

Tables 3, 4, and 4 list a range of techniques and applications for repairing and restoring the integrity of the concrete pavement slab.

Table 3: Concrete Pavement Repair Techniques (Preventive Activities)

S. No.	Repair Technique	Application
1	Crack and Joint resealing with flexible sealant	Used to minimize infiltration of water and incompressible material into joint system.
2	Crack sealing with epoxy resin	Used to seal shallow fine to medium width cracks and prevent concrete breaking out at spalls
3	Crack cross stitching	Used to repair low and medium severity longitudinal cracks.
4	Partial depth repairs	Used to repair joint and crack deterioration and surface distress. Used to repair popouts and potholes.

Table 4: Concrete Pavement Repair Techniques (Corrective Activities)

(Ref: ACPA Concrete Pavement Restoration Guide)

S. No.	Repair Technique	Application
1	Full depth repairs	Used to repair full depth cracks and joint deterioration. Used to repair punchouts (CRCP)
2	Slab stabilization	A specialized technique used to alleviate pumping
3	Dowel bar retrofit	A specialized technique used to restore load transfer at joints and cracks
4	Slab lifting or jacking	A specialized technique used to raise sunken slabs by lifting or pressure grouting beneath the panel.

S. No.	Repair Technique	Application
5	Diamond grinding	A specialized technique used to extend serviceability, improve ride and skid resistance
6	Diamond Grooving	A specialized technique used to reduce wet weather accidents and prevent hydroplaning

Table 5: Annual calendar of Road Maintenance Activities for Rigid and Flexible Pavements

S. N.	Item of Work	Intervention Standard	Response Time	Frequency	Remarks
1	Cleaning/Desilting of roadside drain/ gutter			Thrice February, May and June	Refer Govt of HP Rural Road maintenance policy 2015
	Water diverted out of drain onto roadway	Causing a hazard to traffic	Immediate	i) August and	
	Obstruction or Siltation impeding flow	Blocked by more than one-fourth of the size of the drain	14 days and prior to monsoon	ii) September and iii) and when required blockade more than one-fourth	
2	Pothole Filling				
	Collection of patch repair material for Bituminous roads			i) January and February	
	Collection of patch repair material for WBM repair			ii) July to September	
	Pothole filling in Bituminous and rigid pavement with maximum dimension more than 200mm, cracks, edge breaks, ruts and depressions	All potholes = 75mm depth, Cracks > 5mm in width, Ruts > 50 mm in depth, Depressions > 50 mm in depth	21 days	i) January and February	
	Pothole filling in WBM with maximum dimension >200mm	Depth > 75mm	21 days	ii) July to August	
	Pothole filling in Gravel/ Katcha surface	Depth > 50mm width > 300mm	45 days	Immediate on their occurrence	
3	Filling edges of bituminous surfaces and replenishing/ lowering earthen/ hard shoulders	Difference (-) 50mm/ (+) 0mm		Before and after monsoons and as and when requirements as specified are exceeded as per Col.3	
4	Dressing of berms			Before and after monsoons and once in between i.e. February/ March, June, August and September	
5	Restoration of rain cuts and side slopes			September and as and when required	

7.2.2 Maintenance, Repair and Rehabilitation of Cement Concrete Pavements

(Based on IRC: SP: 63-2018 -Guidelines for the use of Interlocking Concrete Block Pavement)

General:

Like any other road work, block pavement also required to be maintained to get long service. The maintenance requirement of block pavement is minimal. The block pavement requires initial maintenance soon after its laying, say after a week or two for checking sand in the joints. Subsequently, the maintenance is in the form of replacing any damaged block/blocks or raising the settled section, if

any. Repair especially after laying a cable duct is much simpler in the case of block pavements. The cut area can be reinstated without any blemish.

Initial Maintenance:

After about a week of laying the blocks there is a need to inspect the surface to check for any loss of sand at joints. Wherever sand level has dropped down it should be reinstated. This type of inspection should continue for two to three months till the sand level is stabilized and topping up is no more required. With time, the joints receive fine dust and detritus thus making them waterproof. During rains these joints may allow weeds to grow but these normally should get eliminated with the traffic. In case, it does not get eliminated, these may have to be controlled by spraying herbicide or by manual removal. Annual inspection, however, will be required.

Storage of Blocks:

For reinstating damaged blocks, it is necessary to stockpile a small percentage of blocks from the lots used in the construction. The size and color of the blocks may be difficult to obtain at a later date matching with the original blocks. For important projects, it is normal to stockpile blocks from 1 per cent to 3 per cent of initial supply for subsequent use.

Coating and Cleaning:

As part of preventive maintenance, blocks can be sealed using compounds, like, silicone, acrylics and silica fluorides for enhancing the color, reducing absorptive nature of the blocks and for improving surface toughness. These coatings have life of 1 to 3 years and hence they have to be repeated as per the requirement. The most durable of these chemicals is solvent borne acrylics which are abrasion resistant and also minimize chemical effects of spillage even at 60°C.

Cleaning of block pavement can be done by mechanical brooms, compressors or even by manual means. For removing certain stains, chemicals, like, oxalic, acetic and phosphoric acids etc. are used. Sometimes it may be expedient to replace the blocks where stains have penetrated to a greater depth.

8. O&M OF MICRO IRRIGATION AND OTHER FACILITIES

8.1 Operation and Maintenance of Drip Irrigation Scheme

An irrigation system requires minimal maintenance if it is planned and designed as recommended. It is advisable that all components must be checked as per the guidelines for installation of specific products. A maintenance plan and regular monitoring of the system ensures that minor problems do not turn into major ones.

The quality of water differs with its source. Higher rainfall in summer means that water sources are muddy due to increased content of silt and sand. Algae are more prevalent during warmer months, which increases the biomass that must be filtered. The quality of water, usually, becomes poor because of lower water level as pumps tend to suck more dirt and there is little time for the silt and sand to settle out of the water. When the water quality is poor, filters must be flushed at regular intervals. It is essential to keep a record of lateral flushing, filter flushing and water quality.

In 'preventive maintenance', a procedure or group of procedures is adopted to prevent obstructions from plugging, clogging or blocking of drippers. In 'corrective maintenance', obstructions that cause dysfunction to the system are removed.

It is also required to check the working of filters, air release valves and the fertigation unit. Once it is ensured that all the components are functioning properly and the required pressure exists in the scheme, the scheme is ready for use.

8.1.1 Operation of drip scheme components

When the drip irrigation scheme is in use, it is of course desired that the scheme be operated properly in a trouble-free and durable manner. The following guidelines may be considered for this purpose:

- 1) Keep all the design, evaluation and testing information from the designer, installer, and dealer handy.
- 2) Compute the time of operation of different subunits based on the climatological data of previous day(s) or from the average historical data; prepare the time schedules for different valves and operate the valves accordingly to release the desired quantity of water, compute the volume of water to be applied for each setting/subunit and ensure that the desired quantity of water is applied.
- 3) Check the pressure at the pressure gages regularly.
- 4) For the scheme involving the operation of valves hydraulically, ensure proper setting of the hydraulic metering valve.
- 5) Operating the head valve to begin irrigation.
- 6) Checking the scheme all components for proper operation, beginning with pressure readings at the control header.
- 7) Checking the emitters, randomly for its discharge.
- 8) Measure the emission uniformity of the scheme at least at the start of the irrigation season.
- 9) Check the chemical and fertilizer injection equipment to ensure the application of desired quantity and concentration.

8.1.2 Maintenance of drip scheme components

Periodic preventive maintenance of all the components of the drip irrigation scheme is required for successful operation of drip irrigation scheme.

Maintenance of Pumps

Usually, maintenance instructions are available from manufacturers, pump users' associations and other technical organizations. For most engine or electric motor driven pumps, checks and inspections are for noise, vibration, leakage, temperatures of bearings and windings, fuel/power consumption, capacity and output (water discharge and dynamic head), ventilation screens etc. Special care should be taken to protect engines from moisture that can accumulate inside the machines and cause serious damage.

Pre-season Maintenance

- 1) Check pumps impellers for wear. Repair if necessary.
- 2) Re-pack bushings if necessary and lubricate pump.
- 3) Install the suction pipe on a pump. Make sure it is well supported and has no air leaks. A vacuum gauge installed in the suction line is a good way to monitor suction problems.
- 4) Make sure a pressure gauge is installed at the outlet and is operable. A good fluid filled pressure gauge is a good monitoring tool.
- 5) Check power panel, wiring and pump enclosure to make sure mouse nests, bird nests, and other such problems are resolved.
- 6) Inlet screens should be cleaned, and trash removed from the structure. Repair screens as necessary.
- 7) Check headgates and valves for proper operation. Grease gate stems.
- 8) Check structures and pipeline for damage and repair as needed.

Operation Check list for Pumps

Before turning on the pump, following shall be done:

- 1) Check that all pre-season maintenance is complete.
- 2) Before starting, read and record flow meter totals.
- 3) Inspect all drains to be sure that drain valves are closed.
- 4) Inspect all mainline, lateral, and turnout valves. Open the operational turnout. The first and last risers on each line, as well as any riser that is at a high point in the line, should be cracked open to allow air to be released from the system.
- 5) Open all manual air release valves.
- 6) Inspect all air valves to see that the airway is open (stem pushed down) and the float ball and seat are in place and undamaged.
- 7) Visually inspect all pressure relief valves to be sure that they are free to operate and have not been adjusted to a higher or lower pressure setting.
- 8) Before turning on the pump, the valve at the pump should be closed to the point that it is not more than 1/4 open.
- 9) After the pipeline is filled, slowly open the valve to full open. If the flow must be throttled during operation, consideration should be given to making changes in the system. Throttled valve wastes energy.

Maintenance of Valves

All kinds of valves should be anchored properly so as to minimize the turning movement imparted to the pipe by operation.

Maintenance of distribution network

A drip irrigation system requires more attention and maintenance as compared to other irrigation systems. A drip irrigation system is vulnerable to over-pressurization and clogging, both of which can drastically reduce the system's durability and performance.

For drip irrigation, turn on the system 20–30 minutes before inspection to allow enough time for emitter wetting patterns to show up. Check for leaks or clogged emitters from the valve to the end of the irrigation line. Check the placement of emitters near plants.

Emitters

The emitter functioning, wetting pattern and leakage of pipes, valves, and fittings should be checked regularly. The placement of emitters should be ascertained. If the placement is disturbed, place them in proper position. If emitters do not give the rated pressure, they need to be cleaned manually either by flushing or provide manual or automatic chemical (acid or chlorine) treatments. Emitters not giving the rated discharge even after flushing or the chemical treatments should be replaced. Leakage through filter gaskets in the lids, flushing valves & fittings etc. are monitored regularly.

Sub-main and Lateral / System Flushing

System flushing is the process of opening flush valves on the main line, sub-mains or laterals while under pressure. It is possible that the silt or other dirt materials escape through the filters and settles in sub mains and laterals. Also, some algae and bacteria lead to the formation of slimes/pastes in the sub mains and laterals. The sub mains should be flushed by opening the flush valves to remove these formations. The lateral should be flushed by removing the end caps allowing water to pass through.

Flushing increases the water velocity inside the pipeline or dripper line, which scours and removes contaminants off the walls or from individual emitters. The pressure of the regulating valve is increased to achieve enhanced velocities, nevertheless, care must be taken not to exceed the burst pressure of the emitter line and take-off adapters. Recommended flushing velocities are as follows.

- 1) Main line: 1 meter per second
- 2) Sub-mains: 1 meter per second
- 3) Laterals: 0.5 meter per second

Choking of Pipes by excess silt minimum velocities as prescribed shall be maintained for flushing of the pipes. During the first irrigation, scour valves should be let open to scour out any foreign material deposited.

System flushing needs to be carried out at regular intervals. The frequency of flushing depends mainly on the water quality and weather. Table indicates the starting point for flushing. However, individual site conditions influence the increase or decrease of flushing intervals. Table 6 below presents the quality of flushing intervals for different water sources.

Table 6: Quality of Flushing for Different Water Sources at Different Intervals

Quality	Water source	Flushing interval
Good	<ul style="list-style-type: none"> Bore water with no presence of iron or magnesium 	6 months
Average	<ul style="list-style-type: none"> Rivers, dams or lagoons that are slow flowing Wastewater discharged from industries after treatment 	4 months
Poor	<ul style="list-style-type: none"> Rivers, creeks or canals found in hot climates with increased biological growth and no chemical treatment Faulty placement of the pumping point in the direction of wind with little or no sedimentation Untreated effluent water after sedimentation 	Monthly
Very poor	<ul style="list-style-type: none"> Bore water having high iron or magnesium content 	Fortnightly

Maintenance Schedule

A. Daily maintenance:

Following activities should be carried out daily:

- 1) Start the pump and allow the pressure to become stable. Open the drain valves of the screen filters and hydro cyclone filters to remove the debris. Backwash the sand filter.

Back washing is the process in which the flow direction is reversed so that the water flows upwards through the sand bed. The sand gets lifted and expands allowing it to release the dirt arrested in it, the dirt then driven out of the filter through the back wash valve. Back washing of the sand filter should be strictly done in the following sequence.

- 1) Open the Backwash valve.
- 2) Close the outlet valve
- 3) Open the bypass valve.
- 4) Close the inlet valve.

Back wash operation is complete when clear water starts flowing out through the backwash valve to resume the filtration process again.

Manual cleaning processes is open the cap of the sand filter before starting the system and remove all dust, algae and other dirty particles manually.

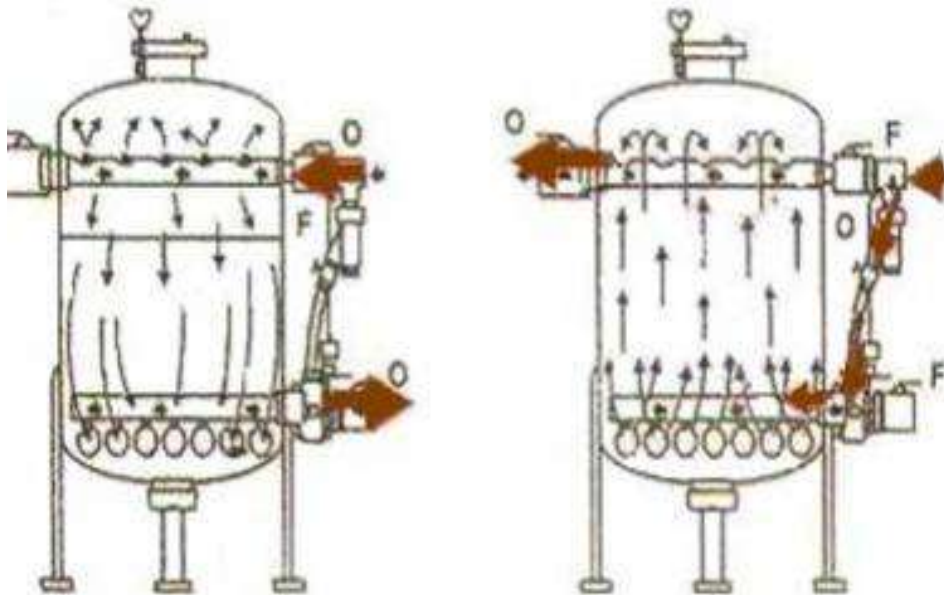
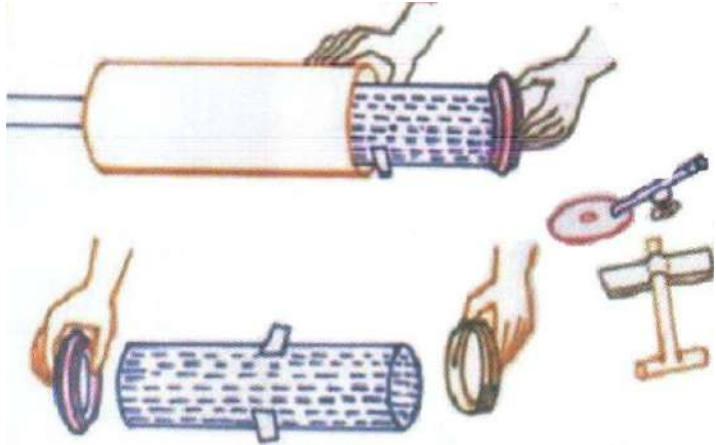


Figure 5: Back-wash Cleaning of Sand Filter in a Drip System

- 2) After cleaning the filters, operate the by-pass valve of the header assembly to obtain the desired pressure in the system. It should be about 1-1.5 kg/cm² at the inlet of filter and 1.1 kg/cm² at the inlet of the sub-mains.
- 3) Take a round of the entire field and check if there is any leakage at joints or damage to any component of the system. Rectify the defects if any by replacing the spares. Remove the folds or kinks on the lateral if found, make them straight.
- 4) Check the drippers for uniformity of discharge. Open and clean the drippers which are not emitting water. Do not pull the emitter when cleaning; it will enlarge the hole on the lateral causing leakage.
- 5) After irrigation over, check whether the wetting patterns of the drippers are uniform or not.
- 6) Check the position of the drippers, if drippers are misplaced, place them at proper location.
- 7) Remove the end stops and flush the laterals, flush the sub-main at the end of the irrigation cycle.

B. Fortnightly Maintenance:

After completing the steps 1 – 7 of the daily maintenance, perform the following operations every 15 days. Filter is the heart of a drip irrigation scheme, and its failure will lead to clogging of the emitters and in turn the poor performance of the scheme. Pressure difference across the filter is used as the indicator for deciding the timing of cleaning of the filter.



a) Hydro Cyclone Filter

Hydro cyclone filter should be installed before sand and screen filter in case there is heavy load of sand in irrigation water. Water enters the hydro-cyclone via a tangential inlet, which creates a spiral flow along the walls of the filter. The centrifugal force separates the waste and sand particles and pushes them towards the walls of the sand separator. Particles gravitate downwards into the sedimentation tank, while clean water moves upwards and exits through the top outlet. A hydro-cyclone filter requires least maintenance as regards to cleaning. For cleaning, flush the chamber by opening the flush valve or cap or open the main valve. The filter becomes ineffective once the dirt collection chamber is full.

b) Sand Filter

The sand filter should be backwashed every day for five minutes to remove the silt other dirt or any other organic matter accumulated during the previous day's irrigation. Once a week, while backwashing, the backwash water should be allowed to pass through the lid instead of the backwash valves. The sand in the filter bed is stirred up to the filter candles without damaging them. Whatever dirt is accumulated deep inside the sand bed will get free and goes out with the water through the lid. The need of back washing can be detected by monitoring the pressure drop across the filter. When the pressure drops increased to a pre-determined level, the filter should be backflushed.

The pressure difference between the inlet and outlet of the filter is an indicator that suggests whether filters need cleaning. The difference is more than 0.5 kg/cm², it means that the filter needs cleaning.

- Open the lid of the sand filter.
- Allow the water to come out through the lid opening. Adjust the flow using bypass valve such that sand does not come out of the opening.
- Stir the sand thoroughly by moving the hand through entire sand media from top to bottom. Be careful and do not disturb the position of black filter candles provided at the bottom, else sand may enter the screen filter.
- Break the lumps of the sand by squeezing in hand.
- Ensure that half the filter is filled with sand up to the level marked on the filter. Add new sand if it is below the mark.
- Allow water flow till clean water starts flowing out of the opening.
- Put the lid back in position tightly.

c) Screen Filter

The fine particles and dirt which escape through the sand filter are arrested on the filtering element of the screen filter. This affects the filtering process. Therefore, it is essential to clean the filtering element every 15 days. Flushing at scheduled intervals is necessary for the maintenance of

screen filters. It is recommended to flush the screen filter when the pressure drops more than 0.5 kg/cm² (5 m at water head). The pressure difference can be observed by checking the inlet and outlet pressure by using a single three-way control valve at regular intervals. The process of cleaning the screen filter is simple. Flushing of a screen filter is done in the following manner.

- 1) Open the drain valve, thereby, allowing the water force to flush out dirt through the valve.
- 2) Open the screen filter lid. Remove the screen and clean it under running water by rubbing it with a cloth or soft nylon brush.
- 3) Protect the metal parts of the filter from scratches, acid, chlorine or fertiliser spillage, and apply oil paint immediately on the scratch to avoid corrosion.

d) Disc filter

A disc filter serves as a primary or secondary filter for water, which contains high amount of organic or inorganic matter. It consists of a stack of discs, each with a series of microscopic grooves. The dimension of the grooves determines the effective mesh size of the filter, which generally, ranges from 40 to 600 mesh. Disc filter requires less maintenance. Flushing of the disc filter is done either by opening the drain valve or by back flushing. The steps followed for cleaning the disc filter are as follows.

Step 1: Remove the filter element and loosen the disc set by extending the spine element.

Step 2: Now, remove the screen and clean it with pressurized clean water.

Step 3: Replace the worn-out discs with clean ones

Step 4: If the disc filter is to be cleaned with an acid or a chlorine solution, use the recommended concentration.

Step 5: Assemble the filter after cleaning.

C. Monthly Maintenance:

If the salts, algae and other impurities present in the water enter into the drip irrigation system, then the laterals and drippers get clogged and may stop emitting water. Therefore, it is necessary to apply acid and chlorine treatments once in a month or as recommended in the water quality analysis report. The procedure and calculation of doses for acid and chlorine treatment are explained in detail in Acid treatment.

- Perform the treatment to remove precipitated salts from drippers and pipeline network.
- Perform chlorine treatment to remove bacterial slime, algae or other biological contamination.
- Inspect all the components above ground for physical abuse, damage by field machinery rats, squirrels etc.
- Do not perform both acid and chlorine treatment simultaneously.

D. Half yearly maintenance:

- Change the sand of the media filter with new one as sand particles get rounded off due to continuous abrasion during operation.
- Check out the system wear and tear, replace the spares whenever required.
- Make necessary maintenance of the pump as per instructions given by the pump manufacturer.

8.1.3 Maintenance of fertigation equipment

It is always advisable to allow clean water through venturi or other injectors for 10 to 15 minutes before and after fertilizer application for uniform application of fertilizers. It will also prevent clogging of suction port of venturi from clogging. It is important to note that equipment is resistant to acid. The lid of the fertilizer tank should be fully tightened while in operation. To check leaks between the body and bell housing in fertigation pump, clean the seal seating and put back the seal or change and keep the position of bell housing at upright.

Chemical Treatments

Clogging or plugging of emitters/orifices is due to precipitation and accumulation of certain dissolved salts like carbonates, bi-carbonates, iron, calcium, and manganese salts. The clogging is also due to the presence of microorganisms and the related iron and sulfur slimes due to algae and bacteria. The clogging or plugging is usually removed by chemical treatment. Chemical treatments commonly used in drip irrigation schemes include application of chloride and/or acid with water. The frequency of chemical treatment is decided on the degree of clogging and quality of water. Chlorine treatment is required to remove organic, and any physical materials and acid treatment is required to remove the salt and any chemical precipitates from the scheme. Generally, acid treatment is performed once in ten days and chlorine treatment once in fifteen days.

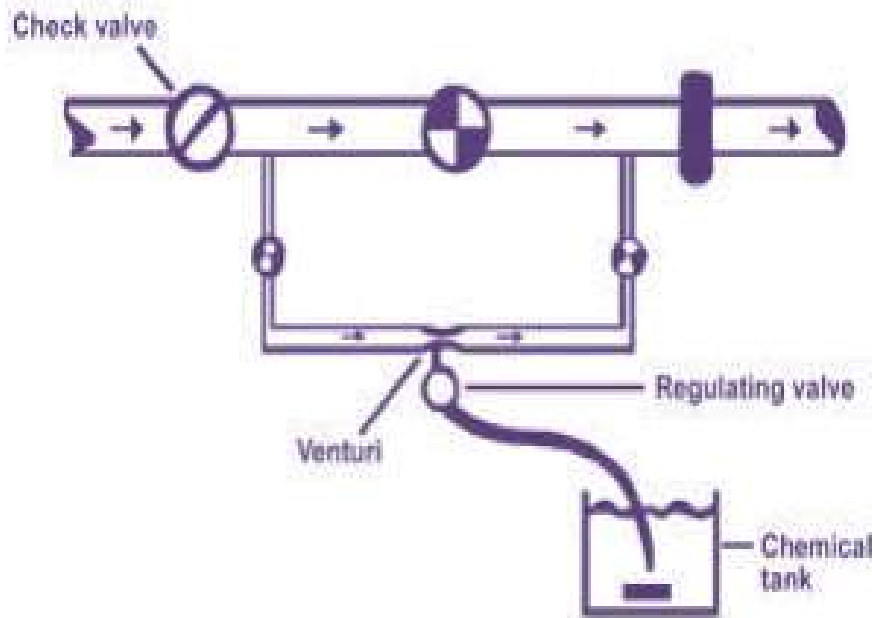


Figure 6: Chemical or Acid Treatment Procedure for Cleaning Drip System

i) Acid Treatment

Acid is injected into the drip irrigation scheme at the rate suggested in the water analysis report. The acid treatment is performed till a pH of 4 is observed at the end of pipe. After achieving a pH of 4 the scheme is shut off for 24 hours. The scheme is then flushed by opening the flush valve and lateral end caps.

For acid treatment any one of the following acids can be used.

- a. Hydrochloric Acid
- b. Sulphuric Acid
- c. Nitric Acid
- d. Phosphoric Acid.

Material and accessories required.

- 1) A plastic bucket or jar
- 2) An empty water bottle of 1 liter volume
- 3) A dropper (available in any medical shop)
- 4) pH paper that indicates color change according to pH shifts
- 5) Hydrochloric acid (it is normally readily available in the market).

Procedure:

Step 1: Estimation of volume of acid required for treatment

1. From the water source used for drip system, take 1 liter of water in a plastic bucket or jar.
2. Add acid drop by drop in this 1-liter water using a dropper. Stir the water well and measure its pH value.
3. Continue the above process till the pH value of water is equal to 4.
4. Note the quantity of acid in ml required to obtain pH value of 4.
5. The time required for water to reach the furthest dripper can be physically measured in the field by noting the time of starting the pump and the time when water reaches the last dripper of the section. A fair estimate of this can also be obtained by dividing the total length of mainline + sub-main + lateral by the velocity of flow 1.5m/s. If a section of a field has 900 m pipe length, the time taken to reach the last dripper is $900/105$ seconds. I.e. 600 seconds or 10 min.
6. Note the flow rate of the section to be treated from the design. If the system flow rate is not known, then use the value of nominal flow rate in m^3/hr written on the filter of the system. Say the system flow rate 25m^3 .
7. Calculate the quantity of acid required for the treatment of the selected section as given below.
Acid required for 1 liter water for attaining pH value of 4 = 2ml.
Motive flow in the section just to fill the section (total flow in 10 min) = $(25000/60) \times 10 = 4166.67$ liter.
Volume of acid required for acidulating 4166.67-liter water = $4166.67 \times 2\text{ml} = 8.33$ liter. Thus approximately 9 liter of acid will be required to treat the section.

Step 2: Injection procedure:

1. To avoid injection of commercial acid directly to the Venturi, mix the estimated quantity of acid (9 liter in this case) in an equal amount of water in a plastic bucket.
2. It is recommended to use a Venturi tube assembly for the acid injection. Connect the Venturi to the manifold of filter. Start the pump.
3. First, begin closing the Throttle valve keeping the suction tube of the Venturi assembly outside the bucket contains acid. Water comes out of the small filter attached to the suction tube of the Venturi assembly.
4. Continue closing the throttle valve till the outward flow of water from the suction tube stops and air bubbles start moving into the tube in the reverse direction.
5. Place the tube inside the bucket with acid solution keeping the filter end below the surface of the acid solution.
6. Check the pH of water at the nearest dripper of the section. If pH is observed to be more than 4, then increase the suction rate by slightly closing the valve.
7. In this way throttling the valve allow the acid mixed water having pH value of 4 to reach up to the last dripper. Close the sub-main valve or switch off the pump. Keep the system closed for 24 hrs. It takes a minimum of 6 hrs. for the salts in the system to dissolve in the acid mixed water.
8. After 24 hrs. open the sub-main flush valve and the ends of all laterals. Start the pump and flush out the entire system so that all acid and dissolve salts are driven out of the system.

ii) Chlorine Treatment

Chlorine treatment in the form of bleaching powder is performed to inhibit the growth of microorganisms like algae and bacteria. The bleaching powder is dissolved in water and this solution is injected into the scheme for about 30 minutes. Then the scheme is shut off for 24 hours. The lateral end caps and flush valves are opened to flush out the water with impurities. The recommended chlorine dosages are 0.5 to 1.0 mg/liter continuously or 20 mg/liter for 20 minutes at the end of each irrigation

cycle for algae while for slimes, 1.0 mg/liter free residual chlorine is maintained at the end of each lateral. For iron precipitation, 0.64 times the Fe⁺⁺ content are used to maintain 1.0 mg/liter free residual chlorine at the end of each lateral. Efficiency of chlorine injection is related to pH of the water to be treated. More chlorine is required at a high pH. The rate of injection of liquid chlorine or acid depends on the scheme flow rate and can be determined by using the following expressions.

$$q_c = K \frac{uxQ_s}{C}$$

Where:

q_c = Rate of injection of the chemical into the scheme,
 K = Conversion constant, 6×10^{-3}
 U = Desired concentration of chemical in irrigation water, mg/liter.
 Q_s = Supply flow rate, L/min
 C = Concentration of chemical in the solution to be injected, percent

8.1.4 Troubleshooting in drip irrigation system

The biggest problem of any drip irrigation system is clogging of emitters. Drip Irrigation System Kits use very simple emitters that are less prone to clogging due to a wider flow path. Therefore, it requires less maintenance than other drippers. However, periodic and preventive maintenance is essential for smooth system function. The following general checks can be carried out periodically depending on the local condition and water quality:

1. Clogging of emitters and wetting pattern
2. Placement of emitters / micro-tubes
3. Leakages in pipes, valves, filter, fittings, etc.
4. Flushing & cleaning of filter by opening and cleaning the screen
5. Flushing of sub-main & laterals by releasing the end caps

Apart from physical impurities that can be separated by using a screen filter, there are dissolved chemical (mainly salts) impurities and biological impurities like algae, bacteria, etc. present in some water sources. If the dissolved salts are more concentrated, they can accumulate and clog the emitters. Hydrochloric acid can be applied to the emitters to flush the salts. If bacteria or algae clogs the system, chlorine treatment in the form of bleaching powder (2mg/liter) can be added to clean the emitters and inhibit slime growth. Some common problems faced by micro irrigation systems, causes and troubleshooting required are given in the following tables.

Table 7: Troubleshooting Potential Problems of Micro Irrigation Systems

Problem	Cause	Troubleshooting
Micro-tube/ emitter not delivering water.	Clogging due to impurities in water or air bubble in micro-tube/emitter	<ol style="list-style-type: none"> 1. Take out micro-tube from lateral pipe and shake it or blow it so that the dirt or trapped air comes out. If it is a different type of emitter, open it and clean it with a needle so that dirt is removed. Then fix the emitter and check it is working. 2. Check the filter screen and gasket for any possible leakage and if required, replace them.
Leakage in lateral, sub-main or main pipe	Cut in pipe due to mechanical damage, rodents, etc.	Cut the pipe at the place of damage and connect it by using joiner / connector. For large diameter pipes, if joiners are not available then a service saddle can be used.
Leakage in fittings of lateral pipe.	Pipe expansion or frequent use	Cut the pipe end for the expanded portion and insert the fitting in it again. If the fitting is too

Problem	Cause	Troubleshooting
		loose for the pipe diameter it can be adjusted by heating it.
Reduced flow of water from emitter.	1. Caked filter 2. Pipe leakage 3. Open end cap	1. Clean the filter screen. 2. Repair pipe leakage as mentioned above. 3. Tighten the end.
Leakage of water at the joint between sub main and lateral	Damaged joints	Correct damages
Water not flowing upto lateral end	Holes in laterals. Cuts in laterals. Bents in laterals.	Close the holes and cuts. Remove the bends.
Out coming of white mixture on removing the end plug	More salinity in water. Uncleaned lateral	Remove the end stop. Clean the laterals fortnightly
Under flow or overflow from laterals	Clogging of drippers. Unclosed end plug	Clean the sand and screen filters. Close the end cap
Oily gum material comes out on opening the lateral end	More algae or ferrous material in water	Clean the laterals with water or give chemical treatment
More pressure drop in filters	Accumulation of dirt in filters	Clean filters every week. Back wash the filters for every 5 minutes daily.
Pressure gauge not working	Rainwater entry inside. Corrosion in gauge pointer damage	Provide plastic cover and fix pointer properly.
Drop in pressure	Leakage in main opened outlet. Low water level in well.	Arrest the leakage and close outlet. Lower the pump with reference to well water level
More pressure at the entry of sand filter	No bypass in the pipeline/bypass not opened. Displacement of filter element. Less quantity of sand in filters	Provide bypass before filter and regulate pressure. Place filter element properly. Fill required quantity of sand
Accumulation of sand and debris in screen filter	Displacement of filter element. Less quantity of sand in filters	Place filter element properly. Fill required quantity of sand
Venturi not working during chemical treatment and fertigation	Excess pressure on filters. Improper fitting of venturi assembly.	Bypass extra water to reduce pressure Repair the venturi assembly.
Leakage of water from air release valve.	Damaged air release valve ring.	Replace the damaged ring.

8.2 Operation and Maintenance of Sprinkler Irrigation Scheme

Proper operation of any irrigation system involves ensuring that the irrigation duration matches both the application rate and the soil's intake rate, maximizing water storage in the root zone. To fully benefit from a sprinkler system, it must be operated according to its design specifications. Adjusting sprinkler spacing or movement distance compensates for variations due to wind or exceptionally hot days, ensuring uniform water application.

However, successful design of a sprinkler irrigation system alone does not guarantee success. It is crucial to align the prime mover and pump correctly. Both the drive shaft and pump shaft should ideally be at the same height to avoid excessive angles on the universal shaft.

When laying main and lateral pipes, starting from the pump ensures proper connection of all quick coupling pipes. During coupling, cleanliness of both the couplings and rubber seal rings is essential.

Initiating the sprinkler system involves starting the motor or engine with valves closed. The pump must achieve the pressure specified on the type plate; otherwise, there may be an issue with the suction line. Once the pump reaches the regulated pressure, slowly open the delivery valve. Similarly, after stopping the power unit, close the delivery valve and adjust pipes and sprinkler lines as necessary, especially for portable systems. The following steps outline how to operate a sprinkler system

effectively.

- 1) Start the pump and open the valve to fill the pipes with water.
- 2) Release all end caps and flush valves to clean the system of dirt and clogging. Before operating the system, remove the end caps from the ends of the laterals and sub-mains to allow dirt to be flushed out and air to escape. Open the control valve to allow water to flow freely through the pipes for a period. Then, close the end caps and verify that water is coming out from each sprinkler
- 3) Check the pressure and discharge of water and ensure that all sprinklers are operational.
- 4) Operate the system according to the recommended irrigation schedule.

8.2.1 Operation and monitoring of sprinkler irrigation system

The installation of spray heads for sprinklers typically falls into two main types: risers and pop-ups. These options come in various spray patterns, such as full-circle, half-circle, quarter-circle, and fully adjustable. Each nozzle is designed to achieve matched precipitation rates, ensuring that a quarter-circle pattern delivers one-fourth the water of a full-circle pattern. This uniformity is crucial within each zone to prevent uneven distribution, which can lead to dry or overly saturated areas if different sprinkler head types are mixed on the same lateral.

The effectiveness of sprinkler operation hinges on the uniformity of water application, influenced by the spray distribution characteristics of the nozzles and the spacing between sprinklers. Overlapping coverage between sprinklers, although it may seem redundant, is necessary to ensure consistent watering.

The spray distribution characteristics vary based on nozzle size and operating pressure. Lower pressures produce larger drops that fall farther from the sprinkler in a ring pattern, while higher pressures create finer droplets that fall closer to the sprinkler. Most sprinklers include a built-in radius adjustment to control the throw of water.

Operating a sprinkler at pressures above the design range results in excessive misting (small droplet size) and water is easily blown away or evaporated or may accumulate close to the sprinkler. The actual spacing, however, shall be guided by the size of pipes available in market. Generally, pipes of 6 m (full size) and 3 m (half size) are available.

8.2.2 Maintenance of sprinkler irrigation system

At the beginning of each growing season, check the irrigation line from the valve to the spray heads for leaks. Take a round of the entire field and check if there is leakage at joints or damage to any component of the system. Rectify the defects, if any, by replacing the spare parts. Remove folds or kinks on laterals or pipes and make them straight.

Clean the irrigation system periodically to remove dirt and debris that have built up over time. There are few basic steps that one must take at least once in a year to ensure that water always gets through the system. Using a filter can prevent build-up of minerals and organic particles in pipes, risers and nozzles, and make it easy for cleaning. It is also important to follow these instructions to flush each zone in the system at least once a year.

- 1) Turn off water supply to one zone and remove nozzles and sprinkler heads.
- 2) Run water through the zone for few minutes until the filter is clean and a clear stream of water flows from each sprinkler.
- 3) Take apart the nozzles (depending on the type, one can do this by hand or with a screwdriver or special key).

- 4) Clean the nozzles to remove dirt or deposits.
- 5) Rinse the filter screen or basket.
- 6) Reassemble the filter and replace the damaged or worn-out parts.
- 7) Turn on the zone again to check that everything is leak-proof and operational.

Table 8: Maintenance Schedule for Sprinkler Irrigation System

Frequency	Item	Action
Daily	Pressures	Check that pump and block pressures are within the prescribed limits.
	Emitter operation	Check for clogged, broken or misplaced emitters. Repair, replace, unclog, or reposition the emitters.
	Leaks	Check for water wastage and leaks in pipes and other equipment and repair them immediately.
	Primary filter	Flush primary filters as prescribed.
	Fertigation application	Check that fertigation applications are within specifications.
Weekly	Lateral lines	Flush the lateral lines as prescribed.
	Exposed joints	Check and repair them if needed, e.g., quick coupling rubbers.
	Secondary filters	Flush the secondary filters as prescribed.
	System pressure and flow	Check that the system pressure and flow are as per the irrigation design plan.
	Pump operation	Check that pump operation is within the prescribed parameters.
	Block pressures for automated valves	Check that the block pressures are within the prescribed limits where automated valves are used.
	Pump oil levels	Check pump oil levels as prescribed.
	Fertigation plant	Inspect the fertigation plant.
	Pipes	Check for leaks and repair them.
Monthly	Valves, water meter and gauges	Visually check the valves, water meter and gauges, and look for damage and vandalism.
	Filters	Open and inspect the filters as prescribed.
	Pump pipe work	Check for leaks at the pump station that causes water losses and airlocks.
	Pump motor	The pump motor must be greased as prescribed.
Annually	Valves	Check the service valves and replace them, if required.
	Filters	Clean the filters and replace them annually or in two years.
	Pump	Change oil in the pump.
	Water sampling	Take water sample at the end of lateral lines and send it for analysis.
	Emitter delivery tests	Test specific emitters for discharge and pressure.
	Sprinkler parts	Replace nozzles annually and the other parts when needed.
2–10 years	Pump	Replace the bearings and other worn-out parts of the pump every five years.
	Hydraulic valves	Replace the diaphragms in hydraulic valves every three years.
	Poly pipe and emitters	Replace the poly pipe and emitters every 7–10 years.

Maintenance schedule for pumps

The following maintenance schedules, generally, apply to most pumps under average operating conditions.

Table 9: Maintenance Schedule for Pumps in Sprinkle Irrigation System

Frequency	Action
Monthly	Check the bearing temperature, as the bearing may run hot due to lack of lubrication or its excess.
Quarterly	Drain lubricants in ring oil bearings and wash out the oil wells and bearing with kerosene.
Half-yearly	Check the alignment of pump and driver, and add shims, if required. If misalignment occurs frequently, the entire piping system may have to be checked and necessary corrective actions may have to be taken. Replace gland packing.
Yearly	Thoroughly inspect the unit once in a year. Remove bearings, clean and examine them for flaws. Remove the packing and examine wear and tear in the shaft sleeve or shaft. Disconnect coupling valves and check alignment. Inspect foot valve and check valves.

Table 10: General Pump Glitches and their Causes in Sprinkle Irrigation System

Glitches	Causes
No water delivered/ Not enough water delivered	<ul style="list-style-type: none"> • Pump not primed • Speed too low • Discharge head too high/higher than anticipated • Suction lift too high • Impeller or suction pipe completely/partially plugged • Wrong direction of rotation • Air pocket in suction line • Air leakage in suction line or stuffing box • Insufficient net positive suction head available • Foot valve too small • Insufficient submergence of suction inlet • Bearings worn out
Not enough pressure developed	<ul style="list-style-type: none"> • Speed too low • Excessive amount of air or gas in liquid • Wrong direction of rotation • Viscosity of liquid higher than anticipated • Bearings worn out • Impeller diameter too small
Pump works for a while and then loses prime	<ul style="list-style-type: none"> • Air leak in suction line or clogging • Excess amount of air or gas in liquid • Air pocket in suction line • Water seal tube clogged • Suction lift too high • Insufficient submergence of suction inlet
Pump requires excessive power	<ul style="list-style-type: none"> • Speed too high • Head lower than anticipated, pumps too much water • Specific gravity or viscosity too high • Wrong direction of rotation • Misalignment • Stuffing box too tight • Rotating element rubbing or binding • Bent shaft • Bearings worn out
Stuffing box leaks excessively	<ul style="list-style-type: none"> • Packing is worn out and not adequately lubricated. • Packing not as per recommendations • Shaft sleeve scored. • Bent shaft

Glitches	Causes
Pump noisy or vibrates	<ul style="list-style-type: none"> • Suction lift too high • Insufficient Net Positive Suction Head (NPSH) available • Impeller or suction pipe partially plugged • Misalignment • Foundation not rigid • Lack of lubrication • Bearings worn out • Rotating element out of balance • Bent shaft

8.2.3 Troubleshooting in sprinkler schemes

The following are the general guidelines to identify and remove the common troubles in the sprinkler schemes:

1. Pump does not prime or deliver water

- 1) Check that the suction lift is within the limits. If not, get the pump closer to the water.
- 2) Check the suction pipeline and all connections for air leaks. All connections and flanges should be airtight.
- 3) Check that the strainer on the foot valve is not blocked.
- 4) Check that the flap in the foot valve is free to open fully.
- 5) Check the pump glands for air leaks. If air leaks are suspected, tighten the gland (s) gently. If necessary, repack the glands using a thick grease to seal the gland satisfactorily.
- 6) Check that the gate valve on the delivery pipe is fully closed during priming and opens fully when the pump is running.
- 7) Check that the direction of rotation of the pump is correct.

2. Sprinklers do not turn

- 1) Check pressure.
- 2) Check that the nozzle is not blocked. Preferably unscrew the nozzle or use a small soft piece of wood to clear the blockage. Do not use a piece of wire or metal as this may damage the nozzle.
- 3) Check the condition of washers at the bottom of the bearing and replace them if worn or damaged.
- 4) Check that the swing arm moves freely and that the spoon which moves into the water stream is not bent by comparing it with a sprinkler which is operating correctly.
- 5) Adjust the swing arm spring tension~ Usually it should not be necessary to pull up the spring by more than about 6 mm.
- 6) Sprinkler bearing should be free and smooth. Sprinkler can usually be pushed down towards the riser pipes so that the water pressure flushes out the bearing. If the bearing is still stiff dismantle and then clean it. Oil, grease or any lubricant should not be used.

3. Leakage from coupler or fittings

The sealing rings in the couplers and fittings are usually designed to drain the water from the pipes when the pressure is turned off. This ensures that the pipes are automatically emptied and ready to be moved. With full pressure in the scheme, the couplers and fittings will be effectively leak-free. If, however, there is a leakage, check the following:

- 1) There is no accumulation of dirt or sand in the groove in the coupler in which the sealing ring fits. Clean out any dirt or sand and refit the sealing ring.
- 2) The end of the pipe going inside the coupler is smooth, clean, and not distorted.
- 3) In the case of fittings such as bends, tees and reducers ensure that the fitting has been properly

connected into the coupler.

8.2.4 Maintenance of pipes and fittings of sprinkle systems

In general, the pipes and fittings of sprinkler systems virtually do not require any maintenance. However, attention must be given to the following procedures:

- 1) Occasionally clean any dirt or sand out of the groove in the coupler in which the rubber sealing ring fits. Accumulation of dirt or sand will affect the performance of the rubber sealing ring.
- 2) Keep all nuts and bolts tight.
- 3) Do not lay pipes on new damp concrete or on piles of fertilizer. Do not lay fertilizer sacks on the pipe.
- 4) Avoid trampling over the pipes.
- 5) The pipes are automatically emptied and ready to be moved. When the pump is first started and before the pressure has built up in the system, the seals may give a little leakage. With full pressure in the system, the couplers and fittings will be effectively leak free.

Remove the end stop or end cap and flush the laterals or pipes for 1–2 minutes. Starting from the sub-main inlet, flush the first 4–5 laterals or pipes and proceed to the end. This will help in gaining higher velocity in the laterals and pipes for cleaning. Flush the sub-mains at the end of the irrigation process to remove debris.

8.2.5 Maintenance of underground micro/mini-sprinkler irrigation system

The underground component of the system requires no maintenance. However, at times, because of careless errors during cultural practices, pipes must be replaced for the system to operate at designated pressure. The above ground components of the sprinkler system, if carefully operated and maintained, are expected to last for about 15 years. This would require careful movement of aluminum/plastic pipe, after each riser and sprinklers have been disconnected from the pipe to facilitate ease of movement to the next position. Portable aluminum / PVC pipes connected through coupling with rubber rings to ensure watertight connections. These rings have a life of 2 years and need to be replaced accordingly.

The hoses used for sprinkler systems are rated at 7 meters pressure and are reinforced. Their life expectancy is 8 years. However, at times perforations or cuts occur during cultivation. Line joiners can be used to repair the hoses.

With respect to sprinklers, it is necessary that all nozzles are replaced at least every two years (four seasons), to maintain the correct flow and distribution of water from the sprinkler. This is particularly important when surface water with a high load of suspended solids is used for irrigation. The tension of the sprinkler spring and rear of some of the plastic seals also requires attention. It is therefore necessary that every 4-5 years the sprinklers are taken to the supplier for an overall check-up.

Backwashing

Backwashing is a process, in which the direction of the flow is reversed so that the water flows upwards through the sand bed. If backwashing is not done regularly, then impurities accumulate in the sand bed, thereby reducing the efficiency of the filter. Besides, the system does not get water at the desired pressure.

The backwash operation is complete when clear water starts flowing out through the backwash valve. To resume the filtration process, perform the following:

- Open the inlet valve.

- Close the bypass valve.
- Open the outlet valve.
- Close the backwash valve.

Cleaning of filters

Clean the filters every 5–6 hours or at recommended timings based on the water quality analysis report. After cleaning the filters, operate the bypass valve of the header assembly to obtain the desired pressure in the system. It must be about 1.5–2 kg/cm² at the inlet of the filter and 1 kg/cm² at the inlet of the sub-mains.

Sprinkler heads

The sprinkler heads should be given the following attention:

- 1) When moving the sprinkler lines, make sure that the sprinklers are not damaged or pushed into the soil.
- 2) Do not apply oil, grease, or any lubricant to the sprinklers. They are water lubricated and using oil, grease or any other lubricant may stop them from working.
- 3) Sprinklers usually have a sealed bearing and at the bottom of the bearing there are washers. Usually, it is the washers that wear and not the more expensive metal parts.
- 4) Check the washers for wear once a season or every six months which is especially important where water is sandy. Replace the washers if worn.
- 5) After several season's operation the swing arm spring may need tightening. This is done by pulling out the spring end at the top and re-bending it. This will increase the spring tension.
- 6) In general, check all equipment at the end of the season and make any necessary repairs and adjustments and order the spare parts immediately so that the equipment is in perfect condition to start in the next season.
- 7) Check that each spray head covers the desired area of a field. The heads may have been knocked out of alignment by foot traffic, agriculture tools or machinery. To adjust this, move the nozzle of the sprinkler heads to redirect the spray and turn the spray reduction adjustment screw on the top of the nozzle. Replace the spray heads, if necessary.
- 8) Sometimes, spray heads produce mist or fogging action rather than larger drops necessary for watering. This indicates that the water pressure is too strong. Adjust it at the main shut-off valve. Turn the valve clockwise, manually, until large drops of water are seen at the sprinkler heads. Some automatic valves have a special knob for adjustment called 'flow control', which adjusts the flow to minimize misting and fogging.

8.2.6 Storage of sprinkler equipment

The following points are to be observed while storing the sprinkler equipment during off season:

- 1) Remove the sprinklers and store in a cool, dry place.
- 2) Remove the rubber sealing rings from the couplers and fittings and store them in a cool, dark place.
- 3) The pipes can be stored outdoors in which case they should be placed in racks with one end higher than the other. Do not store pipes along with fertilizer.
- 4) Disconnect the suction and delivery pipework from the pump and pour in a small quantity of medium grade oil. Rotate the pump for a few minutes. Blank the suction and delivery branches. This will prevent the pump from rusting. Grease the shaft.
- 5) Protect the electric motor from the ingress of dust, dampness, and rodents.

8.3 Operation and Maintenance of Solar Pumping System

For the optimal operation of a Solar Pumping system and PV plant, maintenance must be carried out on a regular basis. All the components should be kept clean. It should be ensured that all the components are fastened well at their due place. During the mandatory O&M period of 5 years, the Solar pumping system must be maintained by the vendor for the activity assigned to electrician/technician. The user shall be suitably guided by the vendor for all tasks lying in scope of the user and the user shall also be provided with appropriate documents for such guidance.

8.3.1 Operational guidelines for various components of solar pumping system

Operation guidelines for the various components viz. solar panels, inverter, wiring, motor/pumps, mounting structure etc. are discussed one by one below:

Solar Panel

Although the cleaning frequency for the panels will vary from site to site depending on soiling, it is recommended that:

- a) The panels are cleaned at least once every fifteen days.
- b) Any bird droppings or spots should be cleaned immediately.
- c) Use water and a soft sponge or cloth for cleaning.
- d) Do not use detergent or any abrasive material for panel cleaning.
- e) Iso-propyl alcohol may be used to remove oil or grease stains.
- f) Do not spray water on the panel if the panel glass is cracked or the back side is perforated.
- g) Wipe water from module as soon as possible.
- h) Use proper safety belts while cleaning modules at inclined roofs etc.
- i) The modules should not be cleaned when they are excessively hot. Early morning is particularly good time for module cleaning.
- j) Check if there are any shade problems due to vegetation or new building. If there are, arrange the removal of vegetation or move the panels to a shade-free place.
- k) Ensure that the module terminal connections are not exposed while cleaning; this poses a risk of electric shock.
- l) Never use panels for any unintended use, e. g. drying clothes, chips etc.
- m) Ensure that monkeys or other animals do not damage the panels.

Cables and Connection Boxes

- a) Check the connections for corrosion and tightness.
- b) Check the connection box to make sure that the wires are tight, and the water seals are not damaged.
- c) There should be no vermin inside the box.
- d) Check the cable insulating sheath for cracks, breaks or burns. If the insulation is damaged, replace the wire
- e) If the wire is outside the building, use wire with weather-resistant insulation.
- f) Make sure that the wire is clamped properly and that it should not rub against any sharp edges or corners.
- g) If some wire needs to be changed, make sure it is of proper rating and type.
- h) Check the cleanliness, blocking cables and connection of all visible equipment (pumps, motor, inverter, panels etc....)

Inverter/Controller

- a) The inverter/Controller should be installed in a clean, dry, and ventilated area which is separated from, and not directly above, the battery bank (if applicable).

- b) Remove any excess dust in heat sinks and ventilations. This should only be done with a dry cloth or brush.
- c) Check that vermin have not infested the inverter/controller. Typical signs of this include
- d) Spider webs on ventilation grills or wasps' nests in heat sinks.
- e) Check functionality, e.g. automatic disconnection upon loss of grid power supply, at least once a month.
- f) Verify the state of DC/AC surge arrestors, cable connections, and circuit breakers.

Pumps/Motor

- a) Ensure proper installation and alignment of the pump and motor and also check that all valves and controls are set correctly.
- b) Regularly monitor the system for unusual noises, vibrations, and temperature changes.
- c) Check the pump's flow rate and pressure to ensure they are within specified ranges and observe the motor's electrical parameters.
- d) Regularly inspect the pump and motor for signs of wear, corrosion, and leaks and check the alignment of the pump and motor shafts.
- e) Inspect seals, gaskets, and other components for signs of damage and ensure proper lubrication of bearings and other moving parts according to the manufacturer's recommendations.
- f) Clean filters, strainers, and cooling fins to ensure efficient operation, remove any debris or obstructions from the pump and motor area.
- g) Preventive Maintenance- Schedule regular maintenance tasks, such as changing oil, replacing seals, and recalibrating sensors and maintain a log of maintenance activities, including dates, observations, and actions taken.

Shutting Down the System

- a) Disconnect system from all power sources in accordance with instructions for all other components used in the system.
- b) Completely cover system modules with an opaque material to prevent electricity from being generated while disconnecting conductors.
- c) To the extent possible, system shutdown will not be done during daytime or peak generation.

Table 11: Inspection and Maintenance Schedule for Solar Pumping System

Component	Activity	Description	Interval
PV Module	Cleaning	Clean any bird droppings/ dark spots on module	Immediately
	Cleaning	Clean PV modules with Plain water. Do not use brushes, any types of solvents, abrasives, or harsh detergents.	Fortnightly or as per the site conditions
PV Array	Inspection	Check the PV modules and rack for any damage. Note down location and serial number of damaged modules.	Annual
	Inspection	Determine if any new objects, such as vegetation growth, are causing shading of the array and move them if possible.	Annual
	Vermin Removal	Remove bird nests or Vermin from array and rack area.	Need basis
Junction Boxes	Inspection	Inspect electrical boxes for corrosion or intrusion of water or insects. Seal boxes if required. Check position of switches and breakers. Check operation of all protection devices.	Annual
Wiring	Inspection	Inspect cabling for signs of cracks, defects, loose connections, overheating, arcing, short or open circuits, and ground faults.	Annual

Component	Activity	Description	Interval
Inverter	Inspection	Observe:	Quarterly
		Instantaneous operational indicators on the faceplate of the inverter to ensure that the amount of power being generated is typical of the conditions. Inspect Inverter housing or shelter for physical maintenance, if required.	
Inverter	Service	Clean or replace any air filters.	As needed
Instrument	Validation	Spot-check monitoring instruments pyranometer etc.) with standard instruments to ensure that they are operational and within specifications.	Annual
Transformer	Inspection	Inspect transformer oil level, temperature gauges, breather, silica gel, meter, connections etc.	Annual
Tracker (if present)	Inspection	Inspect gears, gear boxes, bearings as required.	Annual
	Service	Lubricate tracker mounting bearings, gearbox as required.	Bi-annual
Plant	Monitoring	Daily Operation and Performance Monitoring	Daily
Pumps / Motor	Inspection	Alignment of the pump and motor. Monitor the system for unusual noises, vibrations, and temperature. Signs of wear, corrosion, and leaks. Inspect seals, gaskets, and other components.	Quarterly
Spare Parts	Management	Manage inventory of spare parts.	As needed
Logbook	Documentation	Document all O&M activities in a workbook available to all service personnel	Continuous

8.3.2 Maintenance Guidelines of Solar Pumping System

The guidelines for the maintenance of the solar pumping system have been broadly outlined below:

- Periodic cleaning of solar modules, preferably once every fortnight or as per site conditions. As this task must be done by the beneficiary, the contractor shall train the beneficiary on the importance and proper technique for cleaning.
- Maintenance of Solar Power Plant shall be compliant with grid requirements to achieve committed energy generation.
- Periodic checks of the Modules, Inverter, PCUs shall be carried out as a part of routine preventive and breakdown maintenance.
- Immediate replacement of defective Modules, Invertors/PCUs and other equipment as and when required.
- Supply of all spares, consumables and fixtures as required. Such stock shall be maintained for all associated equipment and materials as per manufacturer/ supplier's recommendations.
- All the equipment testing instrument required for Testing, Commissioning and O&M for the healthy operation of the Plant shall be maintained by the Bidder. The testing equipment must be calibrated once every 2 years from NABL accredited labs and the certificate of calibration must be kept for reference as required.
- If negligence/ mal operation on part of the Bidder's operator results in failure of equipment, such equipment should be repaired/ replaced by the Bidder free of cost.
- Contractor shall submit the testing, installation and commissioning report to the Owner.

8.4 Operation and Maintenance of Solar Fencing

Solar fencing is used in locations where there is potential threat from wild animals to agriculture farms and settlements. However, they too need proper operation and maintenance. Care must be exercised in carrying out O&M of solar fencing. The following are some of the “dos” and “don’ts”:

8.4.1 The dos and don'ts for solar fencing

The Dos:

- a) The company erecting solar fence must source all the products/components from MNRE approved and certified companies. Certificates regarding animal & human safety need to be insisted upon. Solar fencing is a solution and not a product, hence it is to be designed as per the requirements laid out by the customer, solar fencing as a unit is not certified, however, all the individual components are.
- b) Take help of an authorized/ experienced agency to install the unit.
- c) Keep the fence neat and clean.
- d) Maintain the wire tension regularly.
- e) Water the fence earth scheme periodically.
- f) Maintain battery health properly.
- g) Remove Energizer connections during heavy storms like lightning.
- h) Test the fence voltage at 2 or 3 points on the fence regularly.
- i) Always use proper fence tools during fence construction and maintenance.

The Don'ts:

- a) Do not connect AC mains power to the Energizer and to the fence lines, unless scheme is designed for.
- b) Do not add acid to your battery where dry maintenance free battery is installed.
- c) Do not power the Energizer directly from the charger or from the solar panel.
- d) Do not electrify barbed wires as this can trap the animals and lead to death.
- e) Do not over-extend the fence beyond the limits of the energizer.

8.4.2 Maintaining solar fence scheme

While minimal maintenance is required, regular checks of solar scheme (every 6 to 8 weeks) will ensure reliable performance.

Some pointers to maximize the life and performance of solar fencing scheme are as under:

- a) Solar panels need to be cleaned with a soft, damp cloth to remove any residue or dust film. Any snow accumulated on the panels needs to be cleaned to maintain the scheme in operation.
- b) Check the mounting bracket is secure and the tilt angle is correct. If necessary, the angle can be changed to accommodate the change in seasons.
- c) Check all leads and connections are secure and undamaged by animals or vegetation.
- d) Check electrolyte level in batteries.
- e) Check all exposed terminals and wires for evidence of corrosion from environmental conditions such as salt or chemicals.
- f) Clear any debris or vegetation that may be causing a short on the fence. Vegetation touching the fence will complete the loop causing the output voltage of the energizer to drop. It is very important, therefore, to minimize the growth on the fence line to ensure that the animal receives the maximum shock available. Trees near the fence may allow monkeys to cross the fence.

8.5 Operation and Maintenance of Agri-machinery and Implement

The agriculture machinery and implements provided by the projects also needs to be taken care of and properly operated and maintained for them to provide the intended benefits. Operation and maintenance of tractors, ploughs, and sprayers have been considered in this manual and their O&M procedures have been described below.

8.5.1 O&M of tractors for farm operations

The tractor is a prime mover which can be used for carrying out farm operations such as ploughing, harrowing, seeding, inter-cultivation, harvesting, transportation, land leveling and operating stationary machines (irrigation pumps, threshers, chaff cutters, cane crusher etc.). All the machines require periodical servicing, maintenance, and repairs for efficient and economical performance to stay in good operating conditions throughout working life. Although, most of the tractor manufacturers provide User's Manual and have appointed their dealers to provide operational know-how, after sales and services of their products, these are inadequate. Consequently, many machines are not properly maintained and are subjected to abnormal breakdowns, wear and tear and thereby reducing the effective life of the machines.

Due to improper maintenance and servicing of the tractors, it has been found that many tractors have been rendered unserviceable within a short period of 5000 hours or even less. Seizures of engine due to lack of oil in the sump and overheating of engine due to inadequate water in the radiator are common troubles. Damage of front wheel bearings and other moving parts due to improper lubrication and adjustments has also been seen often.

Daily check points for starting and safety in tractor are:

- 1) Check fuel in fuel tank (is there enough fuel to complete the task).
- 2) Check coolant level in the radiator or inspect cooling fins on air cooled models of tractor.
- 3) Check tyre inflation pressure (refers to owner's manual for proper inflation of front and rear tires for each job).
- 4) Check the condition of the tyre. Look for cuts, cracks and buckling.
- 5) Check the battery, cables and terminals and electrolyte level.
- 6) Check the transmission and hydraulic oil levels.
- 7) Check air filter elements, or the oil level in an oil bath type air cleaner.
- 8) Check the guards and shields to ensure that they are correctly installed and in good condition.
- 9) Check operator's station. Be sure that it is clear of spilled fuel, oil, grease, crop residue, or loose objects.
- 10) Check the lighting scheme and ensure "Slow Moving Vehicle Emblem" is placed.

Steps for starting a tractor:

- 1) Make necessary checks before riding on the tractor.
- 2) Ride the tractor from the left side of the tractor
- 3) Sit down on the seat
- 4) Make necessary checks after sitting on the seat
- 5) Move the hand accelerator to half of its total travel
- 6) Put the key into the main switch and turn it clockwise to warm the engine with heater (if required).
- 7) Turn the key further clockwise to crank the engine.
- 8) If the engine does not start within 10-20 seconds, repeat cranking of the engine after about 30 seconds.
- 9) Keep the engine running till it is warmed-up (for 2-3 minutes).
- 10) Disengage the clutch by pressing the clutch pedal.
- 11) Select suitable gear depending on speed and load requirement.
- 12) Release parking brake.

- 13) Increase engine speed by moving throttle lever clockwise and slowly release the clutch pedal, until the tractor moves off.
- 14) Take off the foot from the clutch pedal.
- 15) Change gear (up or down) to reduce the engine speed by moving the hand throttle anticlockwise.
- 16) Press the clutch pedal and let the tractor come to the stop position (or crawling speed) to select the desired gear and repeat step 13.

Steps for stopping a tractor

- 1) Reduce the engine speed (by hand throttle lever) to idling position.
- 2) Press the clutch pedal to disengage the clutch and put the gear shift lever in neutral position.
- 3) Release the clutch.
- 4) Stop the tractor (by applying brakes)
- 5) Pull the fuel shut-off knob/ stop switch till engine stops.
- 6) Withdraw key by turning it anticlockwise.
- 7) Engage parking brake.
- 8) Get up from the seat
- 9) Get down from the tractor from left side only.

General precaution guidelines for tractor operation safety precautions:

- 1) Run and maintain the tractor according to the operator's Manual of Tractor provided by the tractor manufacturer.
- 2) Check the working of all controls just after riding the tractor.
- 3) Release the parking brakes before starting.
- 4) Be alert and alert to drive it safely.
- 5) Bring gear-shift lever to neutral position whenever the tractor is stopped, even for a short while.
- 6) Always park the tractor with gear shift lever in the neutral position with parking brake applied.
- 7) Operate the tractor smoothly; avoid jerky starts, turns, and stops.
- 8) Drive slowly in difficult conditions.
- 9) Look at the rear while reversing the tractor.
- 10) Attend immediately to oil and fuel leakages.
- 11) Listen to the noise or sound in the engine and investigate in case of abnormalities.
- 12) Always keep a watch ahead of the tractor.
- 13) When stopped and the tractor went out of gear, set brakes firmly.
- 14) Refuel the tractor only when the engine is cool, doesn't spill fuel and never smoke while refueling.
- 15) Hitch implements only to drawbar or specified hitch points of the tractor.
- 16) Remove air intake assembly before raising the bonnet.
- 17) Beware of oily steps & slippery platforms.
- 18) Never drive after taking alcohol drink or drugs.
- 19) Never run the tractor engine in a closed shed or garage.
- 20) Don't permit unauthorized' persons to ride the tractor unnecessarily.
- 21) Never operate the hand accelerator of tractor from the ground.
- 22) Do not allow the tractor wheels to run over sharp objects.
- 23) Do not keep foot (ride) on the clutch and brake pedals while the tractor is running.
- 24) Do not sit or stand on the implement when the tractor is in motion.
- 25) Do not attempt the dual selector lever when the tractor is in motion.
- 26) Avoid spilling fuel over the engine.

- 27) Avoid overloading of the tractor during operations.
- 28) Do not get off or on the tractor when it is in motion.
- 29) Do not remove the radiator cap while the engine is hot.
- 30) Never leave the key in the starting switch

Guidelines for safety on the farm with the tractors:

- 1) Set the wheels as wide as required for the job. Use wider wheel track on slopes for stability.
- 2) Add weights on rear or front as needed, for proper traction.
- 3) Keep P.T.O. and belt pulley shields in proper place.
- 4) Do not hook load at a point above the drawbar.
- 5) Reverse the tractor in low gear.
- 6) Drive tractor in low gears while overcoming obstacles like small bunds and ditches.
- 7) Draft control should not be used for raising or lowering the implements at the end of trip/ row.
- 8) Do not ride the drawbar of tractor during operation.

Guidelines for Road Safety

- 1) Obey the traffic rules while driving on the road.
- 2) Drive slowly while making turns.
- 3) Use lower gear during up and down-hill driving.
- 4) Be careful during road crossings.
- 5) Stop the tractor on the left side of the road.
- 6) Keep brake pedals interlocked when driving on the road.
- 7) Give way to automobile vehicles.
- 8) While driving at night on a trolley, do make extensive provision for lights at the rear as well as on the sides.
- 9) Never drive down- hill in neutral gear.
- 10) Never depress clutch pedal while driving down-hill.
- 11) Do not tend to turn sharply using independent brakes when travelling at high speeds.
- 12) Do not overload trolley.
- 13) Do not drive without rear-view mirrors

The manufacturers of tractors and other machinery usually provide Manuals to the purchaser for familiarization with the periodical service schedules. The dealers request the buyers to follow service schedule as given in the Manual so that the machine can be used for long time without any wear and tear. Generally, it is recommended to bring the Tractor to the agency after 125, 250, 500 hours use of the machines. In the job chart, they have mentioned the action to be taken by the agency/ service provider. Regular and satisfactory operations together with economic and long-lasting use of the machines depend on the compliance with manufacturer's instructions.

8.5.2 O&M of ploughs for tillage

Mold board ploughs are the other agriculture machinery promoted by the project. This plough is one of the oldest of all the agricultural implements and is generally considered to be the most important tillage implement. Ploughing accounts for more traction energy than any other field operation. Although yield studies have indicated that under certain conditions with some crops there is no apparent advantage in plowing, the mold board plough is still by far the most used implement for primary tillage in seedbed preparation.

M.B. Plough is equipped with a heavy-duty box frame specially designed for deep ploughing / land preparation of rough soil. It is designed to work in all types of soils for basic functions such as soil

breaking, soil raising, soli pulverization and soil turning. It can handle the toughest ploughing job with outstanding penetration performance.

Satisfactory operations:

Regular and satisfactory operations together with economic and long-lasting use of the implement depend on the compliance with manufacturer's instructions.

Tractor preparations for field operations:

Instructions for tractor preparations

- 1) The horsepower of tractor selected should match the implement size.
- 2) Provide adequate front-end ballast for tractor stability.
- 3) All plough adjustment should be carried out.
- 4) Select load and depth control setting according to tractor operators manual.

M.B. Plough Adjustments:

To get better results from M.B. Plough, the following adjustments are necessary:

- 1) Leveling the plough: The level of the plough is controlled by the tractor top link. If the rear end of the plough beam is higher than the front end of the beam, lengthen the top link. If the rear end of the plough beam is lower than the front end, then shorten the top link. Lateral leveling is controlled by adjusting the length of the tractor right lower link. These adjustments must be made with the plough prior to operation.
- 2) Horizontal suction or land suction: Horizontal suction is the amount the point of share is bend offline with the land side. The object of the suction is to make the plough take the proper amount of furrow width. Horizontal suction is measured by placing a straight edge on the side of the plough extending from the heel of the landside to the point of share, then measuring horizontally the greatest distance from the straight edge to the plough bottom. The amount is usually about 3/16 inch.
- 3) Vertical suction or down suction: This is the bend downward of the point of share to make the plough penetrate the soil to the proper depth when the plough is pulled forward. The amount of suction shall vary from 1/8 to 3/16 inch depending on the style of plough and the soil it will make to work in. This suction can be measured by placing a straight edge on the bottom of the plough extending from the heel of the bottom of land side to the point of share, then measuring vertically and the greatest clearance from the straight edge to the plough bottom.
- 4) Draft of the M B plough: The type of soil is the greatest external factor to consider the draft of any plough. In very hard ground, it is often necessary to add weight to the wheels to force the plough into the soil. Draft is also affected by the depth and width of cut per bottom for complete plough. Speed is also another factor which increases the draft, doubling the speed increases the draft by about 20 -25%. Soil moisture is also an important factor for draft.
- 5) Adjustment for deeper ploughing: The depth of the plough can be obtained by the position and draft control levers of the tractor hydraulic scheme. However more depth can be obtained by:
 - a. Adding extra weight to the plough.
 - b. Vertical suction
 - c. If the ground is covered with trash, set the plough in an almost vertical position, and add weight to the plough. In such soils notched plough gives better results.
- 6) Warning for driver:
 - a) Before ploughing check all nuts and bolts of the MB. Plough.
 - b) Don't plough on stony soil.
 - c) Tractor should be in high first gear.

7) Danger:

Before ploughing with M B Plough take care that nobody stands near it.

Usage instructions:

- 1) Before mounting the M.B. plough make sure that all nuts and bolts are properly secured.
- 2) Attaching the plough to the tractor
 - a) Place the plough duly leveled on the flat piece of land.
 - b) Reverse the tractor to the plough (Do not drag the plough up the tractor)
 - c) Attach the left arm of the tractor to the plough first.
 - d) Attach the central arm to the plough. To attach, turn the screws on both sides to an equal length. If the arm is too short or too long, turn the screw to adjust both at the same time until aligned with the hole on the central arm
 - e) To attach the lower right arm, turn the screw until the mounting pin is at the same level as the hole on the tractor arm. If the gap between hole and mounting pin is too close or too distant, turn the control arm in or pull it away to an appropriate distance. You may have to adjust both height and distance at the same time. When the hole at tractor arm and mounting pin are even, insert the pin in the hole and lock it with the lynch pin.
 - f) After attaching the plough lift it and adjust the control arm parallel to the ground. When you look from both rear and sideways, the point should all be touching the ground uniformly.
- 3) NB: The plough will work best when the right wheel of the tractor is inside the previously ploughed furrow. So that the plough is in one of the furrows. Readjust the plough alignments again if necessary.
- 4) Instructions for driver
 - a) When M.B. plough is ready for use don't stand between M.B. plough & the tractor.
 - b) Properly fit the three-point linkage as mentioned above and lock with lynch pin.
 - c) Never turn the tractor to the right or left when the plough is engaged in the soil.
 - d) Never reverse the tractor when the plough is engaged in the soil.

If you work the M.B. Plough on stony land, then maintenance also increases. The following rules must be followed to get the best results from maintenance of M.B. Plough:

- 1) If M.B. plough is new, then after the first two hours of working tightened all nut bolts.
- 2) Check the plough adjustments if the steering is hard.
- 3) Constantly check for loose nuts and bolts.
- 4) After every fifty hours tighten all nuts and bolts.
- 5) Sharpen the bar point and shares if the shares are dull. Blunt shares increase the draft considerably.

8.5.3 O&M of thresher for harvest

A thresher is a machine to separate grains from the harvested crop and provide clean grain without much loss and damage. Bureau of Indian Standards has specified that the total grain loss should not be more than 5 per cent, in which broken grain should be less than 2 percent.

Component of a thresher and working principle:

A crop thresher mainly consists of the following components:

- a) Feeding device (chute/tray/trough/hopper/conveyor),
- b) Threshing cylinder (hammers/spikes/rasp-bars/wire-loops/syndicator),
- c) Concave (woven-wire mesh/punched sheet/welded square bars),
- d) Blower,

e) Sieve-shaker/straw-walker.

In present times use of multi crop thresher is very common because with a single machine a number of crops can be threshed with minor settings and adjustments. In Himachal Pradesh, mainly cereal crop wheat, paddy and maize are grown beside some pulses and other crops. For paddy threshing separate axial flow thresher is required.

The factors which affect the quality and efficiency of threshing by any thresher are broadly classified in following three groups:

- a) Crop factors: Type of crop, Variety of crop, Moisture in crop material.
- b) Machine factors: Feeding chute angle, Cylinder type, Cylinder diameter, Spike shape, size, and number, concave size, shape and clearance
- c) Operational factors: Cylinder speed, Feed rate, method of feeding, Machine adjustments.

Therefore, to get the optimum performance from the machine and good quality of threshed material, combinations of these factors should be adjusted during operation for a particular crop.

A. Adjustments in threshers:

Various adjustments are required before starting threshing operation. The machine is to be installed on clean level ground and is to be set according to crop and crop conditions. The adjustments necessary to get the best performance from the machine are (i) concave clearance, (ii) sieve clearance, (iii) sieve slope, (iv) stroke length and (v) blower suction opening. Besides these, cylinder concave grate, top sieve hole size and cylinder speeds for threshing different crops are important for a multi crop thresher. The following are some general guidelines for adjustments of a thresher. At all times, consult the user's manual that is provided by the manufacturer. Also, review the safety/ health precautions for threshing machines. Thresher has a number of high-speed rotating parts therefore safety is very important for operators while working.

- 1) Position the thresher on a level area close to the crop stack to minimize handling and shattering losses.
- 2) Spread cloth, canvas, or mat underneath the thresher to collect spilled grain from the grain discharge chute or due to shattering during handling.
- 3) Install the cylinder, cover, and feed tray if dismantled during field transport.
- 4) Position the thresher so that the straw is thrown with the direction of the wind. This will eliminate the blowing of straw, chaff, and dust back toward the operator and the threshed grain.
- 5) Check each belt's alignment and tension. Adjust the idler pulley on the blower/cylinder belt to correct tension. Improper alignment and tension are the major causes of premature belt failure.
- 6) Check pulley surfaces. Rough grooves must be smoothened with a fine file if nicked. Cracked pulleys should be replaced immediately.
- 7) Open the cover and check all pegs on the threshing cylinder for tightness. Loose pegs will damage the machine and can be dangerous to the operators.
- 8) Examine the peg teeth for wear. Maximum wear occurs at the feed end of the cylinder and is more prominent at the leading side in the direction of rotation. Worn pegs must be rotated 180 degrees or interchanged with those located near the straw paddles. Badly worn pegs must be replaced with new ones by opening nuts and bolts. Advisable to set all pegs at same level.
- 9) Rotate the threshing cylinder manually at least five revolutions to ensure that there are no obstructions or interferences.

- 10) Lubricate all bearings with good quality grease, the belt idler and oscillating screen eccentric bearings.
- 11) Check engine oil and fuel levels if it is engine is operated. Otherwise, if electric motor operated check the connections as recommended by manufacturer's recommendations.
- 12) Start the thresher and allow to run for 2 to 3 minutes to observe if any bad sound is not coming from rotating components.
- 13) Feed the thresher with the crop to be threshed for performance checking to see that clean grain is coming, no broken grains. Increase cylinder speed if excessive amounts of unthreshed and unseparated grain are observed with the straw.
- 14) Optimum threshing and cleaning is obtained with cylinder speeds of 600 to 750 rpm for wheat and for other crops set as per manufacturer's booklet.

B. Operating the thresher:

- 1) Load the feed tray with the harvested crop. Three to four persons are required to operate the machine. One or two men to load the crops in feeding hopper depending on size of thresher. Two persons require to bring crop bundles. Another person bags the threshed grain and ensures that the cleaning screen is kept free of clinging straw especially when threshing wet material. Use a stick to remove clinging straw from the oscillating screen to protect hands from possible injury.
- 2) Harvested crops must be placed on the feed tray with the panicle away from the operator, so panicle towards cylinder is first fed into the thresher.
- 3) Feed the crop at a uniform rate and maintain maximum feeding rate without overloading the power source. Adjust the feed rate to match the condition of the material being threshed. For wet crops or crops with decomposed straw, reduce the feed rate to avoid overloading the cleaning screen.
- 4) For higher threshing efficiency, the crops should be dried well otherwise unthreshed grain increases. Adjust blower openings (shutters) to give the air flow needed for winnowing. Open slowly to provide more air for a cleaner output if cleaning of grains at outlet is not good. The blower opening must be adjusted to suit the threshing conditions.
- 5) The cutter knives between the pegs prevent straw from wrapping around the cylinder and aid in threshing hard-threshing varieties.
- 6) Reduce feeding rate when threshing wet or partially decomposed materials to avoid overloading.
- 7) Open the cylinder cover periodically to remove straw and chaff accumulation at the lower concave if threshing cylinder is clogged after stoppage of all rotating parts.

C. Safety precautions in threshing operation: -

- 1) Leave all guards and shields in place when operating the machine
- 2) Before cleaning, servicing, or repairing the machine, disconnect the power to the unit.
- 3) Use only properly grounded outlet (electric only).
- 4) Keep hands out of threshing belt entry area.
- 5) Do not wear loose clothing when operating this machine. Clothing can be grabbed by chain drives or rotating shafts and severe injury can result.
- 6) Keep hands and feet away from chain drives and v-belts when machine is running.
- 7) Don't use any alcohol drinks/narcotics items by the operators.
- 8) Thresher fitted with safe feeding chute should only be used. The movement of hands while feeding should not go beyond the covered area on feeding chute.

D. Guidelines for maintenance of a crop thresher:

- 1) Lubricate cylinder and fan bearings with good-quality general purpose grease every 25 hours of operation. Periodically apply a small amount of oil to all hinge points.
- 2) Inspect the machine regularly for loose, worn, or damaged peg teeth, concave bars, cylinder, and other parts, and tighten, repair, or replace them immediately if required. Missing bolts or nuts must also be replaced.
- 3) Reduce belt tensions by loosening the idler pulley and engine mounting bolts when the machine is not in use for an extended period to minimize deterioration.
- 4) Service the engine air cleaner, fuel filter, fuel line, regularly according to engine manufacturer's instructions. Electric motor should be removed when thresher is not in use.

E. Guidelines for storage of a threshing machine

- 1) Clean the machine thoroughly.
- 2) Remove belts and store in a dry place.
- 3) Store the machine in a clean, dry location and cover to reduce damage from dust accumulation.
- 4) Paint parts that need repainting.
- 5) Clean and apply oil to exposed metal surfaces to prevent rusting.
- 6) Follow the manufacturer's recommendations on engine/motor storage.

8.5.4 O&M of Spraying equipment

Spraying equipment or sprayer is a machine which is used to atomize the liquid chemical and spray at the plant uniformly. In agriculture, a sprayer is an equipment that is used to apply herbicides, pesticides, and fertilizers to agricultural crops. Sprayers range in size from man-portable units (typically backpack and spray guns) to trailed sprayers that are connected to a tractor, to self-propelled units.

Adjustments in sprayers:

- 1) **Boom sprayers:** Spraying is the final defense in an integrated pest management plan, timed according to pest and plant development. For optimal results, make minor adjustments before each application, to account for changes in the crop (size, shape and canopy density), weather conditions (relative humidity, wind speed and wind direction), the nature of the pest and the product chemistry. Often, to meet a strict spraying schedule, operators do not take the time to properly adjust their sprayers to match application conditions, resulting in over- or under-spraying. Over-spraying leads to unnecessary environmental contamination and financial loss due to run-off and drift; under-spraying requires more frequent applications to compensate for reduced protection and results in greater net waste compared to a schedule of applications that are correctly calibrated.
 - a) **Sprayer output (nozzle discharge rate):** Adjust sprayer output and distribution at least twice a year, to ensure the sprayer will uniformly cover the target with the optimal volume. The first adjustment should take place during calibration at the beginning of the season; the second when the target crop has grown, and the canopy filled to such an extent that it requires different sprayer settings to achieve coverage. For example, apple trees at the 1-in. fruit stage of development require different sprayer settings than when they are at bud break - the tree is larger, fuller and requires more spray to cover the increase in surface area (i.e., leaves and fruit). At this stage, re-nozzle the sprayer to enable higher output and re-distribute the spray to match the shape and density of the target. Adjust deflector positions to ensure the spray just reaches the top of the highest tree in the block and does not spray below the canopy (Figure 1). Altering driving speed and/or pressure to account for wind or

canopy density is common practice for making minor changes to spray quality and sprayer output, but changing nozzle tips is more accurate and is therefore the preferred method when possible.

- b) **Spray droplet size:** Spray droplet size is highly important for efficient and effective utilization of pesticides with minimum contamination of environment. Select optimum droplet size (mmd) for selection of type of nozzle to be used. Usually spray droplet size vary from coarse sprays (more than 400µm) to Aerosols (<50µm) and accordingly, a good sprayer should be able to produce droplets of uniform size. Air assisted sprayer should be used to get uniform droplet size and droplet density.

- 2) **Uniformity of spray application:** The uniformity of spray application on plants depends on:

- a) Spray boom/ lance height
- b) Spray angle and
- c) Degree of overlap (depends on spray boom height = spray angle and nozzle spacing)

Adjustments in T.D. Aero blast sprayer:

Aero blast sprayer is a precision spraying equipment. It projects fine droplets of chemicals into the target by spraying liquid chemical from hydraulic nozzles into an entraining blast of air generated by fans or turbine directed by volute, deflectors, or ducts.

- 1) **Sprayer output volume:** Optimal sprayer output volume is crop specific. For apple orchards, it is generally 400-1,500 L/ha. Except for dormant oil drenches, the goal is to cover all target surfaces with a minimum droplet density of 80-90 fine-to-medium-sized droplets/cm². This can be difficult to achieve given that the outside of the canopy receives more coverage than the inside. Ideally, the canopy should not drip. Valuable feedback can be obtained through the use of water-sensitive paper placed throughout the target canopy.
- 2) **Air speed and volume:** It is equally important to change the speed and volume of carrier air over the season. In apple trees, the air should barely rustle the outer leaves in the next row. This means setting the air volume high and the air speed low (except to compensate for wind). Adjust air by using a lower PTO speed, gearing up and throttling down, adjusting blade pitch and/or installing a hydraulic motor to control fan speed).

Calibration of sprayers:

- 1) **Calibration:** To apply a specified rate of chemical to the target surface (e.g. plant, soil, pest); one needs to measure the total spray output of the machine, the travel speed and the swath width. Then calculate the application rate.
- 2) **Total sprayer output (L/min):** The aim here is to measure the total liquid sprayed from the spray machine in one minute. First, disengage the gearbox and set the engine revs (1500 is a good starting point) with the power take-off (PTO) engaged at a normal operating speed. Set the pressure at the correct level for spraying. The correct pressure is specified by the manufacturer and determined by the type of nozzles used. All nozzles used for spraying should be left on.
 - a) Fill the spray tank with clean water.
 - b) Place a measuring jug under one nozzle. To avoid personal wetting, attach a piece of plastic hose to the nozzle and place the other end into the jug.
 - c) Run the sprayer for one minute at the correct pressure with all nozzles operating.
 - d) Measure the quantity of water collected in the jug. Compare this to the output specified by the manufacturer using the correct pressure. Nozzle output should not vary by more than 10%. If it does, the nozzle could be worn or damaged and should be replaced. All nozzles on the boom should have a similar output.

- e) Repeat steps 2–4 for all the nozzles.
- f) Add all the jug measurements to find the total sprayer output in liters per minute.
- 3) Travel speed (km/h): The normal speed for spraying with small boom sprayers in horticulture situations is 4–10 km/h. The slower one travels the higher is the application rate. A change in ground speed of 10% results in a 10% change in application rate. Adjust the travel speed to suit the ground conditions.
 - a) Measure out a distance of 100 meters on the ground to be sprayed and mark the start and finish positions with pegs.
 - b) Select the right gear and engine revolutions for spraying.
 - c) Measure the time in seconds it takes to travel 100 meters with the sprayer attached and half full.
 - d) Calculate sprayer travel speed by inserting the time in seconds into the following formula:

$$\text{Travel speed (km/h)} = \frac{100 \text{ (m)} \times 3.6}{\text{Time (seconds)}}$$

- 4) To calculate spray application rate (L/ha): First, measure swath width (in meters). For general broadcast spraying, the swath width is equal to the number of nozzles multiplied by the nozzle spacing. For band spraying the swath width is equal to the total of all the band widths.
- 5) Calculate the application rate: Calculated using the following formula:

$$\text{Application rate (L/ha)} = \frac{600 \times \text{total sprayer output (L/min)}}{\text{Swath width (m)} \times \text{travel speed (km/h)}}$$

For example: If total sprayer output is 5 L/min, & operating speed is 10 km/h, and the swath width is 5m, then application rate is:

$$\frac{600 \times 5}{5 \times 10} = \frac{3000}{50} = 60\text{L/ha}$$

- 5) Benefits of calibration: By calibrating the spraying machine one can find out the spray application rate. This information is necessary whenever the uses of chemicals are specified in amounts per hectare. It also helps to work out how many spray tanks are needed for a particular spraying job. The spray application rate varies for different crops, different row spacing and the age, height and density of crops. This means, it requires to calibrate for each crop or block. Calibration ensures good coverage of the target surface and sprays the correct amount without wastage. It saves time and money, results in a more effective and efficient praying job, and protects the environment.

Safety precautions in operation of sprayers before spraying:

- 1) Identify the pest and ascertain the damage done
- 2) Use pesticide only if crop damage has exceeded the Economical Injury Level.
- 3) Use only the recommended least toxic pesticide.
- 4) Read instructions manual of the pesticide and equipment.
- 5) Check the spraying equipment and accessories which are to be used.
- 6) Ascertain that all components are clean, especially filling and suction strainer, sprayer tank, cut off device and nozzles.
- 7) Replace worn out parts such as 'O' ring, seal, and gasket, worn out nozzle tips, hose clamps and valves.
- 8) Test the sprayer and ascertain whether it pumps the required liquid output at rated pressure.

Check the nozzle spray pattern and discharge rate.

- 9) Calibrate the sprayer. Set spraying speed and nozzle swath by adjusting spray height and nozzle spacing.
- 10) Make sure that appropriate protective clothing is available and is used.
- 11) Train all concerned with the application and understand the recommendations.
- 12) Ensure that soap, towel and plenty of water is available

Safety precautions during spraying:

- 1) Take only sufficient pesticide for the day's application from the store to the site.
- 2) Do not transfer pesticides from original container and packing into the containers.
- 3) Recheck the use instructions of pesticide and equipment.
- 4) Make sure pesticides are mixed in the correct quantities
- 5) Wear appropriate clothing.
- 6) Avoid contamination of the skin especially eyes and mouth.
- 7) Liquid formulation should be poured carefully to avoid splashing.
- 8) Do not spray in high wind, high temperature and rain.
- 9) Avoid drift by selecting proper direction of spraying by holding nozzle and boom at a proper height.
- 10) Start spraying near the downwind edge of the field and proceed upwind so that operator moves into unsprayed area.
- 11) Never eat, drink, or smoke when mixing or applying pesticides. Never blow out clogged nozzles or hoses with a mouth.
- 12) Follow correct spray technique. Spray plant crops thoroughly by operating sprayer at correct speed and correct pressure.
- 13) Never allow children or other unauthorized persons to be nearby during mixing.
- 14) Never leave pesticides unattended in the field.
- 15) Never spray if the wind is blowing towards grazing livestock or pastures regularly used.

Safety precautions after spraying:

- 1) Remaining pesticides left in the tank after spraying should be emptied and disposed of in pits dug on wasteland.
- 2) Never empty the tank into irrigation channels or ponds.
- 3) Never leave unused pesticides in sprayers. Always clean equipment properly. After use, oil it and then keep away in storeroom.
- 4) Do not use empty pesticide containers for any purpose.
- 5) Crush and bury the containers preferably in a land filled dump.
- 6) Clean buckets, sticks, measuring jars, etc. are used in preparing the spray solution.
- 7) Remove and wash protective clothing and footwear. Wash yourself well and put on clean clothing.
- 8) Keep an accurate record of pesticide usage.
- 9) Prevent persons from entering treated areas until it is safe to do so.
- 10) Mark the sprayed plots with a flag.

Maintaining the sprayer:

Sprayers are precision spray equipment that must be kept in good operating condition to ensure proper spray quality. Never assume that following the manufacturer's service instructions for winterizing a sprayer means it is ready for immediate hook-up and use in the coming season. Observe the following start-up steps before using the sprayer. This will prevent unnecessary and costly

breakdowns and improper application and may increase the lifespan of the spray equipment.

- 1) **Cleaning the sprayer:** Before cleaning a sprayer, read the equipment manufacturer's directions and consult the pesticide label for any special instructions. Ideally, clean sprayers at the end of each day (even if the same pesticide will be sprayed the next day) and before switching products. Many growers do not do this, but residues increase the chance of operator contamination, can damage sprayer components and may be incompatible with other products. There are two situation-specific methods for cleaning a sprayer. The first is when similar products will be used on two consecutive occasions. The second is when the product will be changed or when storing the sprayer for a prolonged period (e.g., winterizing). Common to both are the steps for triple-rinsing the sprayer.
- 2) **Triple rinsing:** Sprayers can retain several liters of spray solution following an application, even when the tank appears empty. Rinsing the spray tank multiple times with lower volumes has proven more effective at reducing pesticide residue concentration than a single, high-volume rinse. Low-volume rinsing may not be suitable for certain products; check the pesticide label for cleaning instructions.
 - a) Add clean water to the tank to 10% capacity (ideally 10 parts water to 1 part spray solution remaining in the lines) and circulate it through the entire sprayer for 10 minutes. Open and close any control valves during this process.
 - b) Carry clean water in a separate tank on the sprayer or on a support vehicle and rinse the exterior of the sprayer to remove pesticide deposits. Wearing appropriate personal protective equipment, scrub any persistent exterior deposits. When possible, perform this rinse in the field that was sprayed. The dilute rinse can now be flushed through the lines and sprayed out through the nozzles onto the crop provided the operator does not exceed the label rate.
 - c) Move the sprayer to a permanent loading/mixing pad and rinse the interior of the sprayer twice more (for a total of three) to ensure that the nozzle discharge is clear. Never allow rinse to enter a waterway, drainage scheme or well. For more information, see the Ontario Pesticide Education Program's Grower Pesticide Safety Course manual.

Low-volume tank rinse schemes that reduce operator exposure to pesticide residue are available on newer sprayers. They generally consist of a 200-L supply tank mounted above the pump to supply clean water to rinse nozzles inside the tank. The number and orientation of the rinse nozzles should provide enough water to contact all surfaces inside the tank; use rinse nozzles regularly to prevent seizing. Once again, run the scheme three times and open and close any control valves during this process.

9. MANAGEMENT SUPPORTS FOR O&M FUNCTIONS

This chapter deals with the management supports that needs to be carried out to efficiently carry out the core operation and maintenance functions for making utilization of the project facilities. These management supports can broadly be divided include two categories namely, institutional strengthening of related institutions and financial management.

Apart from following the recommended procedure for operation and maintenance, few basic things are also key to ensure sustainability of project facilities. First, since the FOs have a key role in operating and maintaining the facilities, it needs to be ensured that the FOs themselves are functional and active. Hence, measures for sustaining the FOs have been provided below. Secondly, the financially sustaining mechanism for the necessary operation and maintenance works is also equally. Some suggestions on how that can be established in the context of the facilities developed by the project has also been outlined here.

9.1 Institutional Strengthening of Related Institutions

9.1.1 Awareness raising and capacity building

General awareness and necessary knowledge and skills with the concerned people sets the enabling environment and conditions for the effective operation and maintenance. In this concern awareness raising on various topics including the need for and importance of O&M, roles, and responsibilities of the various institutions in the O&M, judicial use of water, etc. are helpful. Moreover, building the capacity of the concerned institutions by imparting knowledge and skills on the proper procedures for operation and maintenance and addressing associated social and environmental issues is considered to contribute towards improving the operation and maintenance.

Awareness raising on the significance of O&M

First and foremost, the concerned institutions should be made aware of the need for and importance of O&M. They should be informed how much they can benefit from proper O&M.

Awareness raising on the roles, and responsibilities of the various institutions in the O&M

Confusion may also occur if the role and responsibilities is not clear. Hence, clarification of the roles and responsibilities of the different actors and institutions in the different O&M functions should be made from the very beginning.

During the project period, the role and responsibility of establishing the project facilities goes to the project. However, upon completion of the construction works of the irrigation schemes (FIS, LIS and TWIS), they are handed over to the concerned KVA and their ownership is transferred to the KVA. The respective KVA will then be responsible for the O&M of these minor irrigation schemes. Along with construction of different types of irrigation schemes, the project will also support the farmers with micro irrigation and solar schemes. The ownership of these irrigation accessories and equipment will also be transferred to the KVA once their work is completed. Their O&M responsible will also lie with the respective KVA.

The other infrastructure developed by the project are buildings and farm access roads. The project will do the construction and handover the buildings to the concerned government organization for operation and maintenance. In the case of farm access roads, the project will only do the construction, both the ownership and O&M responsibility lies with the concerned KVAs.

If any additional works are felt necessary during the operation and maintenance phase of the irrigation sub-project, then the irrigation Management Committee of the KVA shall call a meeting inviting all KVA member farmers to jointly discuss and decide upon the activities to be carried out and how to accomplish it. They shall prepare a plan of necessary works to be carried out along with a rough estimate of the cost involved. Works within the financial and human resources capacity of the KVA shall be carried out by the KVA. However, if the works are beyond their capacity, the KVA shall approach the relevant institutions for financial support. They can first approach the concerned local government. In case the local government is not able to provide the required support, the KVA shall identify relevant projects in the line agencies like DOA, JSV, DF who can support them for the works.

The main functions of the KVAs are the water allocation, water distribution and grievance redressal. It also includes tariff fixation collection and maintenance of record of the collection as per the KVA Regulations/Byelaws and awareness building: among farmers for judicious use of water.

Awareness raising on judicial use of water and water saving

The KVA shall also play an important role in awareness building for judicial use of water. Awareness building activities shall be taken up by the KVA through:

- i) Facilitating in the organization of training camps with technical assistance from the Department of Agriculture, GoHP, and/or project authorities concerned.
- ii) Facilitating in the arrangement of exposure visits of a team of members to other well-performing KVAs (success stories) in or outside the State.
- iii) Facilitating group interaction with agriculture university and relevant technical state institutes.
- iv) Distribution of sample brochures and setting up of instructive hoardings on the selection of water efficient crops, efficient water management practices, etc.

Capacity building on proper O&M procedures

The KVA should also be capacitated about the proper O&M procedures, and how they should go about them.

9.1.2 Institutional strengthening of the FOs

Since the FOs have a key role in operating and maintaining the facilities, it needs to be ensured that the FOs themselves are functional and active. Hence, measures for sustaining the FOs have been provided below.

Institutional Strengthening of KVAs

For the sustainability of the KVAs, a hierarchy structure with its federation at the state level has been suggested. The organization at the different level shall be as follows:

- Krishak Vikas Association (KVA) at Sub Project level
- Krishak Vikas Sangathan at BPMU level
- Krishak Vikas Munch at DPMU level
- Krishak Vikas Federation at State level

Moreover, for the sustainability it is suggested that every sub-project should be developed into a micro-finance institution. The KVAs of each sub-project should be registered as a Farm Produce Organization (FPO), a cooperative society under Act 1968. The sources of fund for micro-finance should be the KVA membership and its renewal, water user fees for providing irrigation, women SHGs, etc. In this project beneficiary will contribute up to 50% for farm inputs and up to 10% for Farm Roads. Revolving fund, compulsory monthly savings, and annual membership will be generated which is

expected to be instrumental in developing a sense of ownership, confidence, and passion within these different groups.

Institutional Strengthening of FPOs:

For the success of the FPO, it is essential that they should be ready to take risks and calculate risks both financial and for the business. Hence, it is first essential that they the farmers be made aware and familiar with the kind of facilities which are being provide by the government.

Empower individual farmers, KVAs, FIGs and SHGs to achieve economic independence, improve their quality of life and contribute to sustain development. Through the holistic approach that combines skill development, enterprise support and market access, we seek to create lasting positive change and unlock the potential of every participant.

Understand the competition which is around you: how good you are in products, how cost effective the products and how good you are understand the competition

For the sustainability of any individual or any organization, regular financial flow or capital is required. Financial capital can be sustained by the issue of shares to members, membership fees, loans such credits, and profit earned over the course of business. For this, there are many organizations that support financially and technically for the promotion and handholding of FPOs, i.e., NABARD, SFAC (Small Farmers Agri Business Consortium), Corporations and NGOs, and domestic and international agencies. For social capital management FPO should function effectively and address the problems of the member of FPO regularly.

The stability of the FPO depends upon the ability to organize its member and resources not only in gaining economic growth and achieve market share, but also in maintain member's satisfaction, commitment and retaining them. Failing to put more concentration on the social part of action or decision can lead to the process of collapse of the circle of sustainability.

For the sustainability of the FPOs it is recommended to use participatory approach; focus on the enhancement of knowledge of the target farmers, transparency, trust building, dedicated members, adequate working capital, should be confirm for the proper functioning of the FPO and all the activities carried in the FPO should be share among the FPO members, concentration on social, financial and environment issues.

Social factor: build the skill of the farmers on the level of self - sustainability by providing continuous capacity building trainings, enhance knowledge in all aspects).

Environment factors: aware and sensitize the farmers on environment issues which is a big challenge in the near future use of chemicals fertilizer, chemicals pesticides and, weedicides which shall help the farmers to reach the sustainability of FPO.

Financial factor: build the capacity of the farmers to become socially and economically self-sufficient and self-reliant.

All the FPOs, with the help of the project, can form a state level federation under the name "AGRIFED." The project should support and empower the federation in all aspects of self-sustainability. At this level, the federation will never look for any outside support.

Institutional Strengthening of FIGs:

Sustainability of the farmer interest group depends on the dedication of the leader. S/he has to organize and facilitate the entire group unbiased. The group members have to exchange and share new knowledge, skills, and improved technology with each other in group meetings. They have to build social cohesion, develop operational plan, regularly meeting, manage revolving fund, good planning, manage water wisely, and high motivation for sustainability.

Institutional Strengthening of SHGs:

For the sustainability of the SHGs it is suggested that the selection of the beneficiaries should be need based. Provide continuous trainings on the activities adopted by the farmers under livelihood support activities. To build the capacity of the SHGs members on various issues related to how to manage and handle financial matter, leadership skills, marketing, and entrepreneurship. By rewarding the good and active SHGs you can create a positive space for sustainability.

SHGs members should maintain register regularly, member should take SHGs meeting seriously, direct linkages with the producer and customer. So that these SHGs never look further for any other agencies for their sustainability.

9.1.3 Addressing environmental and social issues

Usually, the difference or the dispute among the members of the KVA mainly pertain to sharing and use of water and, in the process, lead to protest against payment of water tariff. The procedures that the KVA shall follow to resolve the differences are stated below:

- i) Any member who has a complaint against another member will notify the President.
- ii) The President shall, soon after receiving the complaint, call the disputing parties, consider their submissions, and endeavour to settle the matter amicably.
- iii) If amicable settlement cannot be reached, the President shall within 3 days of receipt of the complaint call a meeting of the Management Committee to resolve the conflict after hearing the disputing members. The decision shall be taken by a simple majority of votes.
- iv) In case any of the disputing parties are not satisfied with the decision of the Management Committee and notifies the same to the President, a meeting of the General House shall be convened to discuss and resolve the matter. The decision in the General House shall also be taken by a simple majority of votes.
- v) In case any of the disputing parties is not satisfied with the decision of the General House, then aggrieved parties may approach the Block Level Coordination Committee and a meeting will be held at BPMU in the presence of the Management Committee. The Committee shall consist of the following members:
 - Block Project Manager: Chairman
 - Block Development Committee Member (s) of respective sub-project (s)
 - Naib-Tehsildar
 - Chairman KVA (s) of respective sub-project
 - Forest Range Officer
 - Junior Engineer, JVS of respective section
 - Junior Engineer, Electricity of respective section
 - Agriculture Development Officer (Block)
 - Agriculture Development Officer (HPCDP): Member Secretary

- vi) In case any of the disputing parties is not satisfied with the decision of the Block Level Coordination Committee, then the concerned parties may approach the District Level Coordination Committee under the chairmanship of District Collector or his/her nominated representative. The Committee shall consist of the following members:
- District Collector or his/her nominated representative: Chairman
 - Superintending Engineer, Irrigation & Public Health Department
 - Superintending Engineer, Electricity
 - Conservator Forest Department
 - Deputy Director, Agriculture Department
 - District Revenue Officer
 - Project Officer, District Rural Development Agency
 - Scientist In-charge, Krishak Vigyan Kendra
 - Deputy Project Director, Soil and Water Conservation, HPCDP
 - Non-official member (with experience and exposure in agriculture sector): to be nominated by Chairman
 - DPM of respective district: Member Secretary

Further, to minimize the likelihood of disputes, Management Committee meeting will be held at least once in a month during the irrigation season to examine and resolve any contentious issue that may come to its knowledge, and two General Seasonal Meetings of the KVA shall be convened one month before every kharif and rabi season for preparing crop plan, and agreed water distribution schedule, with the objective to attain general consensus among members.

9.2 Financial Management Improvements

9.2.1 Water tariff fixation

The Water rates are levied for the supply of water to ensure equitable water distribution, the efficiency of the irrigation system, and its management. The National Water Policy Statement of 2002 also advocates for *“the water charges for various uses and should be fixed in such a way that they cover at least the Maintenance and Operation charges of providing the service initially and a part of the Capital Costs subsequently”*.

As per Bureau of Indian Standard (IS 14519: 1998): **“GUIDELINES FOR FIXING RATES FOR IRRIGATION WATER”**, the water rates should be adequate to cover the annual maintenance and operation charges and a part of the fixed costs. The water rates depend on type of irrigation schemes i.e. Lift, Tube well or Flow irrigation scheme. The Cost of water can be worked out on Economic Considerations, by computing the following:

- (i) Repayment of Project Cost.
- (ii) Rate of interest on the investment.
- (iii) Electricity charges in case of Lift & Tube Well irrigation.
- (iv) Its effective life span.
- (v) Actual Operational and maintenance charges on irrigation system.

In the State, there are mainly two cropping seasons namely, Kharif and Rabi but as per advancements made in agriculture methods, improved seeds, and the use of fertilizers, the farmers of this hilly-area-dominated State have started growing Zaid crops in the period between Rabi and Kharif on lands, where assured irrigation facilities are available. The farmers will also grow off-season vegetables after getting assured irrigation from HPCDP. The principal crops grown in the State during Kharif season include Maize, Paddy, Sugarcane, Oilseed, Orchards, Vegetables and Fodder etc. and in

Rabi season are Wheat, Oilseeds, Grams, Pulses, Barley, Bajra, Masoor, Vegetables and Fodder etc. Crops like Toria, Potatoes and Peas are cultivated during Zaid season.

In view of the above, season-wise economic rates of providing water to farmers for annual repayment of loan & interest and O&M of the sub projects charges are given in the tables below:

Table. 9.2.1.1. Season-wise water rates fixed for providing water to farmers under HPCDP, Phase-II (Annual Repayment of Loan & Interest):

S. No.	Season	Flow Irrigation			Lift Irrigation			TW Irrigation		
		(Rs/ Ha- cm)	(Rs/ m ³)	(Rs./ Hour)	(Rs/ Ha- cm)	(Rs/ m ³)	(Rs./ Hour)	(Rs/ Ha- cm)	(Rs/ m ³)	(Rs./ Hour)
1.	Kharif	247.00	2.47	91.00	884.00	8.84	325.00	897.00	8.97	329.00
2.	Rabi	247.00	2.47	91.00	884.00	8.84	325.00	897.00	8.97	329.00

Table. 9.2.1.2. Season-wise water rates fixed for providing water to farmers under HPCDP, Phase-II (O&M charges will be borne by KVA/Farmers):

S. No.	Season	Flow Irrigation			Lift Irrigation			TW Irrigation		
		(Rs/ Ha- cm)	(Rs/ m ³)	(Rs./ Hour)	(Rs/ Ha- cm)	(Rs/ m ³)	(Rs./ Hour)	(Rs/ Ha- cm)	(Rs/ m ³)	(Rs./ Hour)
1.	Kharif	129.00	1.29	47.00	367.00	3.67	135.00	372.00	3.72	137.00
2.	Rabi	129.00	1.29	47.00	367.00	3.67	135.00	372.00	3.72	137.00

Table. 9.2.1.3. Project Assistance for providing water to farmers under HPCDP, Phase-II:

S. No.	Season	Flow Irrigation			Lift Irrigation			TW Irrigation		
		(Rs/ Ha- cm)	(Rs/ m ³)	(Rs./ Hour)	(Rs/ Ha- cm)	(Rs/ m ³)	(Rs./ Hour)	(Rs/ Ha- cm)	(Rs/ m ³)	(Rs./ Hour)
1.	Kharif	118.00	1.18	44.00	517.00	5.17	190.00	525.00	5.25	192.00
2.	Rabi	118.00	1.18	44.00	517.00	5.17	190.00	525.00	5.25	192.00

9.2.2 Financial management

In accordance with the provisions of the Regulations/ Byelaws of the KVA, following Accounts Registers shall be maintained:

- Cash Book (**Annexure 19**)
- Bill Register (**Annexure 20**)
- Receipt Book; (**Annexure 21**)
- Asset Register; (**Annexure 22**)
- Register of Demand and Collection of Water Tariff; (**Annexure 23**)
- Register of Landholders; (**Annexure 24**).

All operating funds of the KVA shall be deposited in a savings account in the post office or cooperative bank or nationalized bank. For Institutional Development Fund, separate bank account shall be opened in the post office or cooperative bank or nationalized bank. All The bank account shall be operated through joint signatories of the President, Secretary (in absence of the President) and the

Treasurer of the KVA.

At the end of each financial year, the Management Committee shall submit to the General House an audited Financial Statement in accordance with the provisions of the Regulations/Byelaws of the KVA for its approval.

9.2.3 Sustaining mechanisms

Learning from the experiences from the first phase of the project, it has been concluded that there need to be some incentivization scheme for the farmers' organization (FOs) to be active and sustainable. In this concern, it is suggested that the FOs should be developed into micro-finance institutions. Moreover, necessary capacity building programs should be conducted to raise awareness and enhance their capacity. Further, it is also suggested that sustainable value chains be developed by organizing proper linkages among producers, traders, processors, and service providers to improve productivity and add value of their activities and supporting these groups to sustain business with help of self-generating revenue scheme can make these concepts sustainable. It is observed that a dual intervention of both supporting the farmers' psychological needs for autonomy, competence or relatedness and at the same time mitigating the asymmetry of information in the market helps the target farmers to manage their farming business on their own initiative and improve their livelihood without external help.

Financial sustainability of irrigation schemes can also be assured through funds from line agencies such as Rural Development Department dealing with watershed development projects and O&M budget for irrigation projects under JSV or DOA. MGNREGA funds can be used for desilting of repairing water diversion and water harvesting structures or desilting of channels.

The Management of Corpus Fund

Corpus fund is one of the options for availing necessary funds for O&M of irrigation sub-projects. In this regard, the following provisions of the MOD are worth noting:

- “In order to maintain the assets created under the Project and develop business of FPO, the Corpus Fund, at the rate of INR 1,000 Lakh, shall be provided. This fund would be managed by PMU in the form of fixed deposit, based on the business plan interest accrual shall be used by the FPO. On the other hand, the existing FPO, HAVI can also avail loan for processing and value addition activities on the similar terms and conditions and the details of operation and maintenance of corpus funds shall be framed in consultation with PMC expert” Point No. 114 of Annex II of MoD.
- “FPOs need to secure operational cost to purchase the produce from its member farmers. However, it is a challenge for FPOs to access financial services due to lack of collateral. The Project will take steps to provide FPOs with financial access by creating corpus fund to fulfill the needs of FPOs by the time they acquire adequate credibility to borrow from other financial institutions, in order to maintain the assets created under the Project and develop business of FPO, the Corpus Fund shall be provided” point No. 3.1.4 of Attachment 2 of MoD.

National Agriculture Infra Financing Facility

Another useful option in this regard is the National Agriculture Infra Financing Facility. In view of the crucial role of infrastructure for developing agriculture production dynamics to the next level and optimally utilizing the opportunity for value addition and fair deal for the farmers, the Hon'ble Finance Minister announced on 15.05.2020, 1 lakh crore Agri Infrastructure Fund for farm-gate infrastructure for farmers. Financing facility of Rs. 1,00,000 crore will be provided for funding Agriculture Infrastructure Projects at farm-gate & aggregation points (Primary Agricultural Cooperative Societies,

Farmers Producer Organizations, Agriculture entrepreneurs, Start-ups, etc.). Impetus for development of farm gate and aggregation point, affordable and financially viable Post Harvest Management infrastructure.

Accordingly, DAC&FW has formulated the Central Sector Scheme to mobilize a medium - long term debt financing facility for investment in viable projects relating to postharvest management Infrastructure and community farming assets through incentives and financial support.

Subsequently, in the budget announcement made on 01.02.2021, it was decided to extend the benefit of the scheme to APMCs. Accordingly, modifications in the scheme were carried out with the approval of Cabinet to make it more inclusive.

Credit guarantee coverage will be available for eligible borrowers from this financing facility under Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) scheme for loans up to ₹ 2 crore. The fee for this coverage will be paid by the Government. In case of FPOs the credit guarantee may be availed from the facility created under FPO promotion scheme of DAC&FW.

All loans under this financing facility will have interest subvention of 3% per annum up to a limit of ₹ 2 crore. This subvention will be available for a maximum period of 7 years. In case of loans beyond ₹ 2 crore, then interest subvention will be limited up to ₹ 2 crore. The extent and percentage of funding to private entrepreneurs out of the total financing facility may be fixed by the National Monitoring Committee.

The Scheme will be operational from 2020-21 to 2032-33. Loan disbursement under the scheme will complete in six years. Our sub-projects can also benefit from such national schemes.

Annexures

Annexure 1: Units and Measures

Units	Measures	
Cum	cubic meter	[1 cum = 35.32 cubic feet (cft)]
Ha	Hectare	[1 ha = 2.471 acres (ac)]
Kanal	1 Kanal = 505 square meter	
Marla	20 Marla = 1 Kanal	
q	1 Quintal = 100 kg	
MT	1 Metric Ton = 1000 kg	
m	meter, [1 m = 3.28 feet (ft)]	
M cft	Million cubic Feet, [1 M. cft = 28.32 T cum]	
M cum	million cubic meters	
no.	Number/s	
sq km	Square kilometer	[1sqkm = 0.39 sq. miles]
sq m	Square meter	[1 sqm = 10.8 square feet (sft)]
T cum	thousand cubic meters	
Temperature	Centigrade = $5/9 \times (F-32)$	

Annexure 2: District wise Data of Minor Irrigation Infrastructure to be Developed

(Refer section 1.3)

As per the MOD (Table 1.1.2 and Table 1.1.3), the complete list of infrastructure to be developed has been provided in the Table below:

S. N.	Activity	Unit	Bilaspur	Chamba	Hamirpur	Kangra	Kinnaur	Kullu	Lahaul & Spiti	Mandi	Shimla	Sirmour	Solan	Una	Total
1	Diversion Weir	No	-	17	-	43	-	22	21	41	20	5	8	-	177
2	Protection Work/Spur	No	33	-	46	157	-	-	-	2	-	5	4	-	247
3	Water Harvesting Structure	No	12	-	5	18	-	2	-	6	-	-	2	7	52
4	Tube Well	N.	-	-	1	-	-	-	-	-	-	-	-	10	11
5	Main Channel	m	-	11,165	-	96,985	-	23,380	28,300	80,950	63,820	2,200	20,300	-	327,100
6	Distribution Scheme (HDPE pipeline)	m	9,500	19,290	81,845	91,200	11,000	39,300	61,500	212,490	13,690	22,975	11,050	70,000	683,840
7	Percolation Well	No	-	-	10	2	-	-	-	7	-	3	5	1	28
8	Pump House	No	12	-	22	14	-	2	-	15	-	3	7	19	94
9	Intake Chamber	No	10	16	-	37	2	61	39	41	24	9	49	-	288
10	Pumping Machinery	No	12	-	22	19	-	2	-	14	-	3	7	19	98
11	Storage Tank (No.)	m	39	28	14	37	-	20	20	81	29	16	17	4	305
12	Raising Main	m	6,415	-	10,580	11,200	-	1,500	-	9,100	-	4,900	7,000	8,275	58,970
13	Main Delivery Tank	No	12	-	22	16	-	2	-	17	-	3	7	19	98
14	Pucca Field Channel	m	-	5,700	-	59,850	600	31,850	14,800	-	46,100	2,900	5,700	-	167,500
15	Outlet Chamber	No	490	160	1,062	1,399	10	279	281	3,111	448	28	200	686	8,154
16	Sluice Valve Chamber	No	-	-	191	229	-	-	-	-	-	-	2	-	422
17	Nallah/ Road Crossing	No	16	-	20	42	-	-	-	4	-	6	4	11	103
18	Retaining Wall	No	32	206	34	241	-	157	83	192	2,889	29	744	33	4,640

Annexure 3: Irrigation Water Demand Collection Form

(Refer section 3.1.4)

Name of the Irrigation Scheme:

Location of the Irrigation Scheme:

Requester:

Name of the farmer requesting for water:

Address of the farmer requesting for water:

Water supplying route:

- Channel/branch channel:
.....
- Outlet:

Request:

Desired flow of water:

Desired duration of water delivery (minutes):

Desired timing of water delivery (date and time):

Rationale for the Request:

1. Crop production: Cropping pattern:
2. Fisheries: Number:
3. Livestock: Type and number:
4. Domestic use: Specify:

Request submitted by:

Date of submission of request:

Annexure 4: Critical Periods of Irrigation for Major Crops

(Refer section 3.1.4)

S. No.	Crops	Cropping period (days)	Average Water Required (mm/season)	Critical Periods for Irrigation
Cereal crops:				
1	Paddy	100 - 120	900 - 1500	1. Crop elongation period 2. Jointing period 3. Flowering stage 4. Dough stage
2	Wheat	110 - 130	450 - 650	1. Crown Root initiation 2. Tillering stage 3. Jointing stage 4. Flowering stage 5. Dough stage
3	Maize	90 - 120	500 - 800	1. Knee-high stage 2. Tassel formation stage 3. Grain formation stage 4. Grain maturity stage
4	Barley	110 - 130	450 - 650	1. Flowering stage 2. Grain Formation stage
Vegetable crops:				
1	Tomato	60 - 90	400 - 800	1. Crop elongation 2. Flowering stage
2	Potato	100 - 150	500 - 700	1. Growing stage 2. Tuber shoot formation 3. Tuberization stage
3	Radish	40 - 60	300 - 400	1. Growing stage 2. Root development stage 3. Tap root development stage
4	Cauliflower	55 - 120	350 - 600	• Frequent irrigation from planting to harvest
5	Cabbage	70 - 90	350 - 500	• During head formation and enlargement
Legumes:				
1	Moong	90 - 100	400 - 500	1. Germination stage 2. Flowering stage 3. Pod formation stage
2	Gram	140 - 145	400 - 550	1. Branching stage 2. Flowering stage 3. Pod formation stage
3	Pea	65 - 100	350 - 500	1. Growing stage 2. Flowering stage
4	Soyabean	100 - 120	450 - 700	1. Growing stage 2. Pod formation stage
Oil seed crops:				
1	Mustard	90 - 125	350 - 450	1. Growing stage 2. Before-flowering stage 3. Pod/grain stage
2	Groundnut	110 - 130	550 - 600	1. Growing stage 2. Jointing period 3. Flowering stage 4. Nut-formation stage
3	Sunflower	90 - 120	900 - 1300	1. Growing stage 2. Before-flowering stage
Industrial crops				
1	Sugarcane	300 - 360	1800 - 2400	1. Growing stage 2. Tillering stage

S. No.	Crops	Cropping period (days)	Average Water Required (mm/season)	Critical Periods for Irrigation
				3. Stem development stage 4. Node development stage
2	Cotton	150 - 180	700 – 1300	1. Growing stage 2. Flowering stage 3. No water logging
3	Jute	110 - 140	500 – 700	1. Plant development 2. Stem growth stage 3. Flowering stage

Annexure 5: Maintenance Log of Routine Maintenance in FIS
(Refer section 4.2.1)

Name of FIS:

Date of start of work maintenance: (date/month/year)/...../...202.....

Type of routine maintenance work: (please tick ✓)

- ☐ Strengthening the head weir or intake structure
- ☐ Removing vegetation and other trash from the irrigation network
- ☐ Removing Silt from Water Retention structures
- ☐ Other routine maintenance works, mention:

Performed by:

- ☐ Kohli
- ☐ Concerned beneficiary/ farmers
- ☐ Farmers' group
- ☐ Contractor

List of people engaged in the routine maintenance:

S. N.	Name	Sign	Remarks
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
		Inspected by	
		Recorded by	
		Record signed by	

Annexure 6: Maintenance Log of Periodic Maintenance of FIS
(Refer section 4.2.2)

Name of FIS:

Date of start of work maintenance: (date/month/year)/...../...202.....

Type of periodic maintenance work: (please tick ✓)

- ☐ Periodic repair of intake structures
- ☐ Repair of outlets/hydrants/water control gates etc.
- ☐ Maintenance of farm access roads
- ☐ Other periodic maintenance works, mention:

Performed by: (please tick ✓)

- ☐ Kohli
- ☐ Concerned beneficiary/farmers
- ☐ Management Committee of KVA
- ☐ Contractor

List of people engaged in the routine maintenance:

S. N.	Name	Sign:	Remarks
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
			Inspected by
			Recorded by
			Record signed by

Annexure 7: Maintenance Log of Emergency Maintenance of FIS
(Refer section 4.2.3)

Name of FIS:

Date of start of work maintenance: (date/month/year)/...../...202.....

Type of emergency maintenance work: (please tick ✓)

- ☐ Emergency repair of head weir/intake structure
- ☐ Opening of flood regulation structure
- ☐ Repair of damage due to natural disaster like floods, earthquakes, or storms
- ☐ Other emergency maintenance works, mention:

Performed by: (please tick ✓)

- ☐ Kohli
- ☐ Concerned beneficiary/ farmers
- ☐ Management Committee of KVA
- ☐ Contractor

List of people engaged in the routine maintenance:

S. N.	Name	Sign:	Remarks
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
			Inspected by
			Recorded by
			Record signed by

Annexure 8: Operation record of FIS
(Refer section 4.2.3)

Name of Sub-project:

Sr. No.	Name of Farmer	Pump Operation				Water Charges/ Hour (Rs)	Total Water Charges (Rs.)	Area (Ha)	Name of crops irrigated	Signature of Pump Operator	Remarks
		Date	Start Time	Closing Time	Total Time (Hours)						
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
Total											

Annexure 9: Maintenance Log of Routine Maintenance in LIS
(Refer section 5.2.1)

Name of LIS:

Date of start of work maintenance: (date/month/year)/...../...202.....

Type of routine maintenance work: (please tick ✓)

- ☐ Inspection of pump station
- ☐ Lubrication (oiling and greasing) of electric driven pumps
- ☐ Removing silt from water bodies, sump wells, MDT etc.
- ☐ Removing vegetation and other trash from the irrigation network
- ☐ Other routine maintenance works, mention:

Performed by:

- ☐ Pump operator
- ☐ Concerned beneficiary/ farmers
- ☐ Farmers' group
- ☐ Contractor

List of people engaged in the routine maintenance:

S. N.	Name	Sign:	Remarks
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
			Inspected by
			Recorded by
			Record signed by

Annexure 10: Maintenance Log of Periodic Maintenance of LIS
(Refer section 5.2.2)

Name of LIS:

Date of start of work maintenance: (date/month/year)/...../...202.....

Type of periodic maintenance works: (please tick ✓)

- ☐ Periodic clearance of intake structures
- ☐ Servicing of electric driven pumps/ prime movers
- ☐ Repair of civil structures and allied accessories
- ☐ Maintenance of farm access roads
- ☐ Other periodic maintenance works, mention:

Performed by: (please tick ✓)

- ☐ Concerned beneficiary/ farmers
- ☐ Management Committee of KVA
- ☐ Contractor
- ☐ Authorized dealer

List of people engaged in the routine maintenance:

S. N.	Name	Sign:	Remarks
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
			Inspected by
			Recorded by
			Record signed by

Annexure 11: Maintenance Log of Emergency Maintenance of LIS
(Refer section 5.2.3)

Name of LIS:

Date of start of work maintenance: (date/month/year)/...../...202.....

Type of emergency maintenance works: (please tick ✓)

- ☐ Emergency repair of intake structures
- ☐ Opening of flood regulation structure during excess water
- ☐ Repair of damage due to natural disaster like floods, earthquakes, or storms
- ☐ Damage due to electric short circuit/ moist in transformer
- ☐ Other emergency maintenance works, mention:

Performed by: (please tick ✓)

- ☐ Electricity Board Technician
- ☐ Pump operator
- ☐ Concerned beneficiary/ farmers
- ☐ Management Committee of KVA
- ☐ Contractor

List of people engaged in the routine maintenance:

S. N.	Name	Sign:	Remarks
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
			Inspected by
			Recorded by
			Record signed by

Annexure 12: Operation record of LIS
 (Refer section 5.2.3)

Name of Sub-project:

Sr. No .	Name of Farmer	Pump Operation				Water Charges/ Hour (Rs)	Total Water Charges (Rs.)	Area (Ha)	Name of crops irrigated	Signature of Pump Operator	Remarks
		Date	Start Time	Closing Time	Total Time (Hours)						
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
To tal											

Annexure 13: Maintenance Log of Routine Maintenance in TWIS
(Refer section 6.2.1)

Name of TWIS:

Date of start of work maintenance: (date/month/year)/...../...202.....

Type of routine maintenance work: (please tick ✓)

- ☐ Inspection of electric driven pump, prime movers and wiring
- ☐ Lubrication (oiling and greasing) of electric driven pump
- ☐ Repair of civil structure and accessories
- ☐ Removing vegetation and other trash from the irrigation scheme
- ☐ Other routine maintenance works, mention:

Performed by:

- ☐ Pump operator
- ☐ Concerned beneficiary/ farmers
- ☐ Farmers' group
- ☐ Contractor

List of people engaged in the routine maintenance:

S. N.	Name	Sign:	Remarks
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
			Inspected by
			Recorded by
			Record signed by

Annexure 14: Maintenance Log of Periodic Maintenance of TWIS
(Refer section 6.2.2)

Name of TWIS:

Date of start of work maintenance: (date/month/year)/...../...202.....

Type of periodic maintenance work: (please tick ✓)

- ☐ Periodic repair of tube well
- ☐ Servicing of electric driven pumps
- ☐ Repair of civil structure and accessories
- ☐ Maintenance of farm access roads
- ☐ Other periodic maintenance works, mention:

Performed by: (please tick ✓)

- ☐ Concerned beneficiary/ farmers
- ☐ Management Committee of KVA
- ☐ Contractor
- ☐ Authorized dealer

List of people engaged in the routine maintenance:

S. No.	Name	Signature	Remarks
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
			Inspected by
			Recorded by
			Record signed by

Annexure 15: Maintenance Log of Emergency Maintenance of TWIS
(Refer section 6.2.3)

Name of TWIS:

Date of start of work maintenance: (date/month/year)/...../...202.....

Type of emergency maintenance work: (please tick ✓)

- ☐ Drying up of tubewell
- ☐ Damage due to electric short circuit
- ☐ Repair of damage due to natural disaster like floods, earthquakes, or storms
- ☐ Other emergency maintenance works, mention:

Performed by: (please tick ✓)

- ☐ Electricity Board Technician
- ☐ Pump operator
- ☐ Concerned beneficiaries/ farmers
- ☐ Management Committee of KVA
- ☐ Contractor

List of people engaged in the routine maintenance:

S. No.	Name	Signature	Remarks
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
			Inspected by
			Recorded by
			Record signed by

Annexure 16: Operation record of TWIS
 (Refer section 6.2.3)

Name of Sub-project:

Sr. No .	Name of Farmer	Pump Operation				Water Charges/ Hour (Rs)	Total Water Charges (Rs.)	Area (Ha)	Name of crops irrigated	Signature of Pump Operator	Remarks
		Date	Start Time	Closing Time	Total Time (Hours)						
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
To tal											

Annexure 17: Maintenance Norms, Frequency of Application of Finishing Items

S. No.	Item	Periodicity	
		Residential	Office
1	Painting with plastic/Acrylic Emulsion paint, Acrylic Synthetic enamel paint, Oil bound distemper etc.	3 years	3 years
2	Painting external surface with exterior emulsion or equivalent paint.	5 years	5 years
3	Painting external surface with water proofing cement paint.	3 years	3 years
4	Cleaning and disinfecting of water storage/distribution tanks, water mains.	6 months	6 months
5	Cleaning of Manholes/Gully chambers and flushing of building sewers.	1 year	1 year
6	Cleaning of storm water drains.	1 year	1 year
7	Painting steel water tanks inside with bitumastic paint.	3 years	3 years
8	Polishing wooden doors/ windows with spirit polish/ synthetic acrylic polish.	3 years	3 years
9	Cleaning Electrical installation, fans etc.	1 year	1 year
10	Premix, semi dense/dense carpeting of roads.	5 years	5 years
11	Collection of water samples for physical, chemical and bacteriological analysis of water.	6 months	6 months

Annexure 18: Useful Life of Various Electrical Equipment/Installations Etc.

Sl. No.	Description of Equipment/ Installation	Life years
A	Wiring of Electrical Installations	
1	Conduit wiring non-coastal area	20
2	Conduit wiring coastal area	15
3	MS Pole	20
4	GI Pole	25
5	<i>Outdoor luminaries</i>	7
6	<i>Indoor luminaries</i>	5
B	Fans	
1	Ceiling Fan AC	15
2	Exhaust Fan AC	6
C	External Electrical Lines	
1	Permanent overhead line on steel / RCC poles	20
2	Underground Cable Lines	20
D	Lifts	
1	Electric Lifts <i>residential complex</i>	15
2	Electric Lifts <i>Office building</i>	20
3	Hospital Lifts	15
4	Escalators	15
E	Refrigerators, Coolers & Air Conditioners	
1	Refrigerators	6
2	Cold storage plant with air-cooled condensing unit	8
3	Desert Coolers (1500-2000 cfm) (Evaporative type)	4
4	Water Coolers	5
5	Window type / Split type Air-conditioning units with air cooled	

(Refer section 9.2.2)

Receipt				Payments			
Date	Receipt No.	Particulars	Amount (Rs.)	Date	Voucher No.	Particulars	Amount (Rs.)

AECOM Aecom India Pvt. Ltd.

Refer section 9.2.2)

Sl. No.	Bill		Name and Address of Vendor/Supplier	Description of Supplies/ Works	Amount (Rs.)
	No.	Date			

Page 97 of 101

Annexure 21: Sample Bill Register
(Refer section 9.2.2)

Receipt No. _____

Date: _____

Received
from _____ of _____

_____ (address) a sum of Rs. _____

(Rupees _____)
only towards _____

(Signature of Treasurer)

Annexure 22: Sample Asset Registry
(Refer section 9.2.2)

Sl. No.	Description of Asset	Date of acquired	Unit	Location	Amount (Rs.)

(Dated)

(Signature of Management Committee)

Annexure 23: Sample Bill Register

(Refer section 9.2.2)

Sl. No.	Member		Tariff Charged		Tariff Collected		Amount Uncollected (Rs.)	Remarks
	Name	Address	Demand No.	Amount (Rs.)	Receipt no.	Amount (Rs.)		

(Dated)

(Signature of Management Committee)

Annexure 24: Sample Register of Landholders
(Refer section 9.2.2)

Sl. No.	Name & address of Landholder	Land Identification Details	Area	Location	Remarks

(Dated)

(Signature of KVA)

Annexure-“VIII”									
Proposal for revision of certain project outlays in line with the GoHP present day policy.									
Components/Activities	Unit	Unit Price	Existing Provisions		Proposed revisions		Remarks		
			Phy.	Fin. (₹ in Thousand)	Phy.	Fin. (₹ in Thousand)			
1. Infrastructure Development Component									
1.1 Infrastructure development for sub projects	No. of Sub Projects								
1.1.1 Minor Irrigation		L/S	296	2210000.00	296	2000000.00	Provisions proposed to be curtailed by ₹ 21 Cr.		
1.1.2 Micro Irrigation Systems							Provisions proposed to be curtailed by ₹ 26.75 Cr.		
1) Micro Irrigation System for LJS & TV									
1) Drip	ha.	81460	92	31000.00	92	0.00			
2) Micro and Mini Sprinkler	ha.	47200	184	36000.00	184	0.00			
3) Storage Tank (9 cum Capacity)	No.	21000	1104	23000.00	554	11634.00			
4) Booster Pump	No.	10000	1104	11000.00	553	5530.00			
2) Micro Irrigation System for FIS									
1) Drip	ha.	81460	280	95000.00	280	0.00			
2) Micro and Mini Sprinkler	ha.	47200	280	55000.00	280	0.00			
3) Storage Tank (9 cum Capacity)	No.	21000	2240	47000.00	1140	23940.00			
4) Booster Pump	No.	10000	2240	22000.00	1140	11400.00			
1.1.3 Catchment Area Treatment									
1) Wire Crates	No.	169771	189	32000.00	40	6800.00	Provisions proposed to be curtailed by ₹ 9.90 Cr.		
2) Silt Retention Structures	No.	463429	204	95000.00	46	21200.00			
1.1.4 Solar Pumping									
1) Solar panel with supporting frame, pump, Motor, Electrical Panel, Installation of electric devise and wires, etc.	HP	84700	1037.5	88000.00	0	0.00	Provisions proposed to be curtailed by ₹ 8.80 Cr.		
1.1.5 Access Farm Roads									
1) Cement Concrete Road W= 2.0-4.0m	km	3796514	62.4	237000.00	33.45	127000.00	Provisions proposed to be curtailed by ₹ 11.00 Cr.		
1.1.6 Solar/ electric fencing/ farm fencing									
1) Solar electric powered fencing	mtr.	717	99795	72000.00	0	0.00	Provisions proposed to be curtailed by ₹ 7.20 Cr.		
2) Chain fencing with angle iron	mtr.	320	29980	10000.00	29980	10000.00			
3) Chain fencing with RCC poles	mtr.	350	19967	7000.00	19967	7000.00			
4) Composite fencing with welded mesh & Solar power system	mtr.	665	19948	13000.00	19948	13000.00			
5) Barbed wire fencing with angle iron	mtr.	208	98745	21000.00	98745	21000.00			
6) Barbed wire fencing with iron poles	mtr.	265	24783	7000.00	24783	7000.00			
1.2 Crop Diversification through Convergence in created Irrigation potential of IPH/ DOA	No Reappropriation proposed								
1.2.2 Crop Diversification through Convergence in created irrigation potential of irrigation Schemes of IPH/ DOA									
1) Improvement of existing irrigation Schemes for distribution system	ha.	20000	500	10000.00	500	10000.00			
2) Provision of MIS portable	ha.	100000	100	10000.00	100	10000.00			

Components/Activities	Unit	Unit Price	Existing Provisions		Proposed revisions		Remarks
			Phy.	Fin. (₹ in Thousand)	Phy.	Fin. (₹ in Thousand)	
1.3 Infrastructure development support and Survey, Investigation, Design & Estimation							Provisions proposed to be curtailed by ₹ 3 Cr.
1.3.1 Miscellaneous of above works (Infrastructure development support)				175200.00		145200.00	
1) For FIS sub projects	Sites	75000	97	39000.00	40	3000.00	
2) For LIS sub projects	Sites	150000	184	28000.00	30	4500.00	
3) For IW sub projects	Sites	150000	25	4000.00	10	1500.00	
1.3.2 Survey, Investigation, Design & Estimation	L/S	LS	L/S	136200.00	L/S	136200.00	Provisions proposed to be curtailed by ₹ 87.65 Cr.
Total (1)				3307200.00		2430704.00	
2. Farmers' Support Component							Provisions proposed to be curtailed by ₹ 1.30 Cr.
2.1 Formation and Strengthening KVA				29000.00		16000.00	
2.1.1 Awareness Camp involving Community	No.	8000	306	2000.00	306	2000.00	
2.1.2 Formation and formalization of KVAs				12000.00		8000.00	
1) Workshop of group to develop objectives and norms	No.	4000	306 X 2	2000.00	306 X 2	2000.00	
2) Training to MC Members on role and responsibility	No.	46000	42	2000.00	42	2000.00	Provisions proposed to be curtailed by ₹ 12.45 Cr.
3) Exposure visit of MC Members to KVA in other area of HP	No.	80000	102	8000.00	51	4000.00	
2.1.3 Capacity development of KVAs for O&M Management				15000.00		6000.00	
1) Workshop to discuss principal and practices of irrigation and water management	No.	4000	306 X 2	2000.00	306 X 2	2000.00	
2) Training on techniques of water management	No.	86000	102	9000.00	0	0.00	
3) Field training on basic engineering skills	No.	6000	306 X 2	4000.00	306 X 2	4000.00	Provisions proposed to be curtailed by ₹ 12.45 Cr.
2.2 Vegetable Promotion				662100.00		537597.00	
2.2.1 Incubation and capacity development of community motivators				80000.00		76500.00	
1) Engagement of Community Motivators	No.	108000	306 X 2	66000.00	306 X 2	66000.00	
2) Training on Institutional Development Processes	No.	100000	16	2000.00	8	1000.00	
3) Training on basics of irrigation management and enhancing agriculture production	No.	100000	32	3000.00	16	1500.00	Provisions proposed to be curtailed by ₹ 1000.00
4) Training on promotion and strengthening of SHG (concept)	No.	60000	32	2000.00	16	1000.00	
5) Exposure Visits on Participatory Irrigation Management	No.	200000	32	6000.00	32	6000.00	
6) Peer Learning Interactions for Community Motivators	No.	2500	306	1000.00	306	1000.00	
2.2.2 Farm Economy Management, Training on farm management by farm type (advanced, intermediate and conservative)				65000.00		29988.00	
1) Orientation & Need Assessment	No.	3000	306 X 9	8000.00	306 X 3	2754.00	Provisions proposed to be curtailed by ₹ 2754.00
2) Training on farm management and Bookkeeping	No.	3000	306 X 9	8000.00	306 X 3	2754.00	
3) Workshop of Farmers Group on cropping pattern arrangement	No.	40000	306 X 4	49000.00	306 X 2	24480.00	

✓

Components/Activities			Unit	Unit Price	Existing Provisions		Proposed revisions		Remarks
					Phy.	Fin. (₹ in Thousand)	Phy.	Fin. (₹ in Thousand)	
2.2.3	Training cum method demonstration on Cultivation Practice of vegetable					124100.00		110100.00	
1)	Sub-projects having CCA less than 25 ha (109 no.)	No.	3000		109 X 64	21000.00	109 X 64	21000.00	
2)	Sub-projects having CCA more than 25 ha (187 nos + 10 nos)	No.	3000		197 X 128	76000.00	197 X 128	76000.00	
3)	Water saving and soil moisture conservation techniques	No.	77000		50	4000.00	50	4000.00	
4)	Promotion of Organic farming: Organic fertilizer application	No.	34000		50	2000.00	0	0.00	
5)	Promotion of Organic farming: Organizing Kisan Mela and vegetable shows	No.	100000		10	1000.00	0	0.00	
6)	Promotion of Organic farming: OPM and IPM: Training of farmers group	No.	33000		50	2000.00	0	0.00	
7)	Promotion of Organic farming: OPM and IPM: Exposure visit to model farm for IPM	No.	30000		50	2000.00	0	0.00	
8)	Promotion of Organic farming: Organic fertilizer preparation	No.	34000		50	2000.00	0	0.00	
9)	Promotion of Organic farming: ICS and third party certificate for 3 years in Phase-I organic cluster	No.	10000		500	5000.00	0	0.00	
10)	Promotion of post-harvest processing & marketing: Training/demonstration on agro-processing / preservation	No.	40000		50	2000.00	50	2000.00	
11)	Promotion of post-harvest processing & marketing: Training on market information, food safety, and quality grading	No.	25000		50	1000.00	50	1000.00	
12)	Promotion of post-harvest processing & marketing: Buyer and seller meet at District level	No.	100000		10	1000.00	10	1000.00	
13)	Pilot project for SHEP	No.	45500		112	5100.00	112	5100.00	
2.2.4	Seed production and Demonstration (DOA)					26000.00	1	26000.00	
2.2.5	Food Grain's Productivity Training & demonstration					15000.00	306 X 16	15000.00	
2.2.6	Provision of Farm Machinery					238000.00		210009.00	
1)	Providing support to farmers on cost sharing basis (50:50) project share 50%	No.	238000000		1	238000.00	-	210009.00	
2.2.7	Provision of poly houses & poly tunnels					84000.00		40000.00	
1)	Training cum method demonstration (low tunnels) for vegetable seedlings	No.	5000		1184	6000.00	0	0.00	
2)	Installation of walk in tunnels (10mts X 4 mts=1 unit): 2 units in the sub project	No.	24000		218	5000.00	0	0.00	
3)	Installation of walk in tunnels (10mts X 4 mts=1 unit): 4 units in sub projects	No.	24000		197 X 4	19000.00	0	0.00	
4)	Installation of poly houses including MIS		No.	167000	50	8000.00	0	0.00	

Components/Activities	Unit	Unit Price	Existing Provisions		Proposed revisions		Remarks
			Phy.	Fin. (₹ in Thousand)	Phy.	Fin. (₹ in Thousand)	
5) Small poly houses in kitchen garden on cost sharing basis 85:15: 105 sqm poly house	No.	150150	306	46000.00	0	0.00	
6) Small poly houses in kitchen garden on cost sharing basis 85:15: 252 sqm poly house	No.	287280	100	0.00	50	20000.00	
7) Small poly houses in kitchen garden on cost sharing basis 85:15: 504 sqm poly house	No.	498960	50	0.00	50	20000.00	
2.2.8 Program for Next Generation				30000.00		30000.00	
1) For School Students	No.	14973	1	15000.00	1	15000.00	No Reappropriation proposed
2) Young Farmers	No.	14853	1	15000.00	1	15000.00	
2.3 Research and Seed Production				75000.00		75000.00	
2.3.1 R & D support				25000.00		25000.00	
1) Himachal Pradesh	No.	L/S	1	2000.00	1	2000.00	
2) Multi-location testing of GMS based bacterial wilt resistant hybrids of chili in Himachal Pradesh	No.	L/S	1	2000.00	1	2000.00	
3) Generation of double haploid through induced androgenesis in head cabbage (<i>Brassica oleracea</i> var. <i>capitata</i>)	No.	L/S	1	2000.00	1	2000.00	
4) Multilocational testing and validation of newly developed bacterial wilt resistant and high yielding bell pepper lines/hybrids in H.P.	No.	L/S	1	1000.00	1	1000.00	
5) Multilocational testing and validation of newly developed yellow vein mosaic virus resistant and high yielding okra lines/hybrids in H.P.	No.	L/S	1	1000.00	1	1000.00	
6) Development and promotion of management technology against insect-pests of brinjal	No.	L/S	1	2000.00	1	2000.00	
7) Management of root-knot nematode, <i>Meloidogyne incognita</i> in cucumber under protected cultivation	No.	L/S	1	2000.00	1	2000.00	
8) Assessment, validation and refinement of disease management technology for vegetable crops	No.	L/S	1	3000.00	1	3000.00	
9) Enhancing rice production in high-altitude areas of Himachal Pradesh by development and popularization of high yielding, cold tolerant Japonica rice varieties through farmers' participatory approach.	No.	L/S	1	4000.00	1	4000.00	
10) Genetic amelioration of Kaia zeera (<i>Bunium persicum</i> Boiss) using tissue culture/micropropagation approach	No.	L/S	1	3000.00	1	3000.00	
11) Popularization of potential A B C crops of North Western Himalayas as vegetable and seed under organic and natural farming conditions through participatory plant breeding. (A B C= Amaranthus, Buckwheat	No.	L/S	1	3000.00	1	3000.00	
2.3.2 Infrastructure development at SAI for vegetable seed production	No.	L/S	1	50000.00	1	50000.00	

Components/Activities		Unit	Unit Price	Existing Provisions		Proposed revisions		Remarks
				Phy.	Fin. (₹ in Thousand)	Phy.	Fin. (₹ in Thousand)	
2.4 Innovative activities					47000.00		47000.00	
2.4.1	Establishment of centre of excellence for vegetable nursery production	No.	6800000	2	14000.00	2	14000.00	
2.4.2	Trial for soil less cultivation/Fan Pad GH with vertical system	No.	10000000	1	10000.00	1	10000.00	
2.4.3	Provision of tubular structure shade net houses	No.	816	50 X 100	4000.00	50 X 100	4000.00	
2.4.4	Provision of plastic mulching material	sq. m	4	306 X 10000	11000.00	306 X 10000	11000.00	
2.4.5	Provision of Anti-Hail nets in hail prone areas	sq. m	35	153 X 500	3000.00	153 X 500	3000.00	
2.4.6	Assistance for soil testing kits	No.	105000	50	5000.00	50	5000.00	
2.5 Livelihood support activities for on /off farm activities and service sector activities					265000.00		317930.00	Provisions proposed to be enhanced by ₹ 5.29 Cr.
2.5.1 Formation and formalization of SHGs					5000.00		5000.00	
1)	Workshop of group to develop objectives and norms	No.	4000	306	1000.00	306	1000.00	
2)	Training to SHG members on role and responsibility	No.	97000	42	4000.00	42	4000.00	
2.5.2 Mushroom cultivation on cost sharing basis 80:20					50000.00	0	0.00	
2.5.3 Rearing of honey bees on cost sharing basis 80:20					9000.00		0.00	
1)	10 colony apiary unit	No.	32000	280	9000.00	0	0.00	
2.5.4 Dairy Farming on cost sharing basis 80:20 (Provision of 2 cows/ Buffalos per farmer)					34000.00	690	204930.00	Attachment-1 (Cost Model)
2.5.5 Back yard poultry on cost sharing basis 80:20 (100 birds Per unit)					59000.00	0	0.00	
2.5.6 Service Sector					38000.00	1200	38000.00	
2.5.7 Promotion of Shiitake Mushroom Cultivation (Management Cost for SCTC)					60000.00	1	60000.00	
2.5.8 Promotion of on farm fish culture					10000.00		10000.00	
1)	C/O Raceways of minimum of 50 cubic mtrs. 80:20 cost sharing basis.	No.	240000	10	2000.00	10	2000.00	
2)	Input for Trout Rearing Unit on 80:20 cost sharing basis.	No.	200000	10	2000.00	10	2000.00	
3)	C/O new grow out Fish ponds on 80:20 cost sharing basis.	No.	560000	10	6000.00	10	6000.00	
2.6 Nutrition Improvement Program					6580.00		0.00	Provisions proposed to be curtailed by ₹ 0.65 Cr.
2.6.1	Sensitization of nutrition sensitive intervention	No.	8000	60	480.00	0	0.00	
2.6.2	Dissemination of kitchen garden for nutrition improvement	No.	34000	120	4000.00	0	0.00	
2.6.3	Dissemination of recipes using nutritious ingredients	No.	6000	180	1100.00	0	0.00	
2.6.4	Nutrition Promotion under Next Generation Programme	No.	14973	60	1000.00	0	0.00	
Total (2)					1084680.00		993527.00	Provisions proposed to be curtailed by ₹ 9.12 Cr.

Component/s/Activities	Unit	Unit Price	Existing Provisions		Proposed revisions		Remarks
			Phy.	Fin. (₹ in Thousand)	Phy.	Fin. (₹ in Thousand)	
3. Value Chain and Market Development Component							
3.1 Bringing FPOs up as a business entity				195000.00		195000.00	No Reappropriation proposed
3.1.1 Formation and formalization of FPO							
3.1.2 Business management training	L/S	5800000	10	58000.00	10	58000.00	
3.1.3 (1) Training on post harvest handling and value addition	L/S	10000	3	30000.00	3	30000.00	
(2) Procurement of service provider for business management							No Reappropriation proposed
3.1.4 Corpus funds	L/S	107000000	1	107000.00	1	107000.00	
3.2 Establishment of FPO's Collection Center				78000.00		78000.00	
3.2.1 Construction of collection center including warehouse	No.	5800000	10	58000.00	10	58000.00	
3.2.2 Procurement of machinery & equipment and O & M training	No.	2000000	10	20000.00	10	20000.00	No Reappropriation proposed
3.3 Matching FPOs with agribusiness operators	L/S	L/S	1	30000.00	1	30000.00	
3.3.1 Matching FPOs with agribusiness operators							
3.3.2 Facilitation of pilot business trials							
3.4 Modernizing facilities and equipment in Mandis	L/S	L/S	13 Market Yards	310100.00	13 Market Yards	310100.00	No Reappropriation proposed
3.4.1 Facility construction with equipment		L/S					
3.4.2 O & M of facilities & equipment		L/S		15000.00		15000.00	
1 Kangra/Jassor							
1-1 Construction of collection hall and upgrading of existing yard	L/S	L/S	1	15000.00	1	15000.00	No Reappropriation proposed
2 Kangra/Bassu		L/S		12500.00		12500.00	
2-1 Conversion of auction hall in shops and provision of interlocking concrete paver blocks in open yard area (8 shops)	L/S	L/S	1	7000.00	1	7000.00	
2-2 Provision of bore well	L/S	L/S	1	500.00	1	500.00	
2-3 Construction of boundary wall & retaining walls etc.	L/S	L/S	1	4000.00	1	4000.00	No Reappropriation proposed
2-4 Provision of high mast light	No.	L/S	1	1000.00	1	1000.00	
3 Kullu & LS/Chaurbhal		L/S		28500.00		28500.00	
3-1 Provision of interlocking concrete paver blocks in the yard with U-shaped drain	m ²	L/S	11400	28500.00	11400	28500.00	
4 Kullu & LS/Patlihal		L/S		4500.00		4500.00	No Reappropriation proposed
4-1 Construction of protection walls and steel gate at entry	L/S	L/S	1	4500.00	1	4500.00	
5 Kullu & LS/Khegsu		L/S		900.00		900.00	
5-1 Construction of boundary wall	m	L/S	300	900.00	300	900.00	
6 Mandi/Takoh		L/S		83000.00		83000.00	No Reappropriation proposed
6-1 Expansion of market yard building	m ²	L/S	3100	75800.00	3100	75800.00	
6-2 Provision of interlocking concrete paver blocks in the yard	m3	L/S	2800	4200.00	2800	4200.00	
6-3 Renovation of existing toilet	L/S	L/S	1	1000.00	1	1000.00	
6-4 Renovation of existing drains	L/S	L/S	1	2000.00	1	2000.00	No Reappropriation proposed
7 Shimla & Kinnaur/Bhatakar		L/S		18500.00		18500.00	
7-1 Provision of electrical works (wiring/replacing cabling etc)/ high mast light	L/S	L/S	1	2900.00	1	2900.00	
7-2 Construction of entry & exiting gates	gates	L/S	2	4000.00	2	4000.00	
7-3 Paver block flooring	m ²	L/S	3500	6100.00	3500	6100.00	

Components/Activities				Existing Provisions		Proposed revisions		Remarks
Unit Price				Phy.	Fin. (₹ in Thousand)	Phy.	Fin. (₹ in Thousand)	
7-4	Fencing/retaining walls /breast wall	L/S	L/S	1	4500.00	1	4500.00	
7-5	Installing of weigh bridge	L/S	L/S	1	1000.00	1	1000.00	
8	Shimla & Kinnaur/Tapri		L/S		13500.00		13500.00	
8.1	Provision of electrical works (wiring/replacing cabling etc)/ high mast light	L/S	L/S	1	5000.00	1	5000.00	
8.2	Construction of entry & exit gates	gates	L/S	2	2000.00	2	2000.00	
8.3	Paver block flooring in yard	m ²	L/S	4060		4060	6500.00	
8.4	Fencing/retaining walls /breast wall	L/S	L/S	1	6500.00	1	6500.00	
9	Sirmaur/Ghandoori		L/S		12800.00		12800.00	
9.1	Construction of shops	m ²	L/S	350	7900.00	350	7900.00	
9.2	Construction of toilet block	m ²	L/S	24	500.00	24	500.00	
9.3	Installing toilet facilities (septic tank & soak pit)	L/S	L/S	1	600.00	1	600.00	
9.4	Provision of electrical works & installation of high mast light	L/S	L/S	1	3800.00	1	3800.00	
10	Sirmaur/Khairi		L/S		10700.00		10700.00	
10.1	Construction of office & shops	m ²	L/S	300	6800.00	300	6800.00	
10.2	Construction of auction hall	m ²	L/S	250	2800.00	250	2800.00	
10.3	Construction of toilet block	m ²	L/S	21	500.00	21	500.00	
10.4	Installing toilet facilities (septic tank & soak pit)	L/S	L/S	1	600.00	1	600.00	
11	Solan/solan		L/S		51600.00		51600.00	
11.1	Construction of shops	m ²	L/S	900	10200.00	900	10200.00	
11.2	Construction of auction platform	m ²	L/S	2000	22600.00	2000	22600.00	
11.3	Construction of toilet block	m ²	L/S	62	1400.00	62	1400.00	
11.4	Installing toilet facilities (septic tank & soak pit)	L/S	L/S	1	600.00	1	600.00	
11.5	Installing of boundary wall	m	L/S	1000	4200.00	1000	4200.00	
11.6	Construction of entry gates	units	L/S	2	1000.00	2	1000.00	
11.7	Provision of electrical works & installation of high mast light	L/S	L/S	1	11600.00	1	11600.00	
12	Solan/Vaknaghat		L/S		29400.00		29400.00	
12.1	Construction of office & shops (10 shops)	m ²	L/S	750	17000.00	750	17000.00	
12.2	Construction of auction platform	m ²	L/S	350	4000.00	350	4000.00	
12.3	Construction of check posts (4m x 4m x2)	m ²	L/S	32	700.00	32	700.00	
12.4	Construction of toilet block	m ²	L/S	21	500.00	21	500.00	
12.5	Installing toilet facilities (septic tank & soak pit)	L/S	L/S	1	600.00	1	600.00	
12.6	Installing of boundary wall	m	L/S	350	1500.00	350	1500.00	
12.7	Construction of entry gates	units	L/S	2	400.00	2	400.00	
12.8	Provision of electrical works & installation of high mast light	L/S	L/S	1	4700.00	1	4700.00	
13	Solan/Kunihar		L/S		22100.00		22100.00	
13.1	Construction of office & shops	m ²	L/S	600	13600.00	600	13600.00	
13.2	Construction of auction platform	m ²	L/S	250	2800.00	250	2800.00	
13.3	Construction of toilet block	m ²	L/S	21	500.00	21	500.00	
13.4	Installing toilet facilities (septic tank & soak pit)	L/S	L/S	1	600.00	1	600.00	
13.5	Installing of boundary wall	m	L/S	160	700.00	160	700.00	

Components/Activities	Unit	Unit Price	Existing Provisions		Proposed revisions		Remarks	
			Phy.	Fin. (₹ in Thousand)	Phy.	Fin. (₹ in Thousand)		
13.6	Provision of electrical works & installation of high mast light	L/S	L/S	1	3900.00	1	3900.00	Provisions proposed to be curtailed by ₹ 2 Cr.
3.5	Empowerment of CAs	L/S	L/S	1	20000.00	0	0.00	
	< Trainings>							
1)	Concept of fair trading and necessary skills of auction management							
2)	Laws and regulations related to agri. marketing business							
3)	Quality standards, grading and evaluation of agri. produce							New activity proposed with provisions worth ₹ 100 Cr. New activity proposed with provisions worth ₹ 10.00 Cr. Provisions proposed to be increased/enhanced by ₹108 Cr.
4)	Post-harvest management of agri. produce							
5)	Sanitary management of market facility and agri. produce							
6)	Market information system (eNAM, ENI cell of HPSAMC, etc.)							
7)	Business management (business planning, financing, accounting, documentation & filing, computer operation & communication, etc.)							
3.6	Assistance for Establishment and Strengthening of Milk Processing Plants in IIP through IIP MILKPED	No.	L/S	0	0.00	TBD	1000000.00	
3.7	Establishment of Warehouses/ Silos/ Set up of Potato Flakes Industry in Low Hill Zone of the State	No.	L/S	0	0.00	TBD	100000.00	
Total (3)					633100.00		1713100.00	
4. Institutional Development Component								
4.1	Strengthening of DOA				1406000.00		1328149.00	
4.1.1	Recruitment of PMU Staff (Out-Source)				861000.00		861000.00	
1)	State PMU	year	L/S	9.0	86644.00	9.0	86644.00	
2)	District PMU	year	L/S	8.0	143010.00	8.0	143010.00	
3)	Block PMU	year	L/S	8.0	631730.00	8.0	631730.00	
4.1.2	Capacity Development of Project Staff on PDCA Cycle				16000.00		9789.00	
1)	Orientation Workshop of PMU Staff	year		4	412.00	4	412.00	
2)	Training of District & Block Project Managers on PIM, PRA and CDP	year		3	465.00	3	465.00	
3)	Conceptual Training for PMU Staff on PDCA Cycle	year		2	321.00	2	321.00	
4)	Workshops to establish PDCA cycle	year		3	309.00	3	309.00	
5)	Exposure Visits of PMU Staff (Other States)	year		8	1632.00	8	1632.00	
6)	Peer Learning Workshop	No.		60	600.00	60	600.00	
7)	Organising periodical review meetings, workshops etc.	No.		50	1750.00	50	1750.00	
8)	HRD training on Team building, leadership, Motivation/ inspiration and Stress	No.		76	4560.00	33	2060.00	
9)	Agriculture Extension Training	No.		8	4120.00	3	1620.00	
10)	Engineering Training	No.		8	2120.00	3	620.00	
4.1.3	Review of overall project implementation plan	L/S		1	1000.00	1	1000.00	
4.1.4	Preparation, monitoring & update of Supply Chain	L/S		1	1000.00	1	1000.00	
4.1.5	Preparation, monitoring & update of CDP for each sub-project	L/S		1	1000.00	1	1000.00	
4.1.6	Establishment of MIS & GIS and Monitoring System	L/S		1	10000.00	1	10000.00	
4.1.7	Procurement of ICT related equipment	L/S		1	147000.00		147000.00	

Components/Activities				Existing Provisions		Proposed revisions		Remarks
				Phy.	Fin. (₹ in Thousand)	Phy.	Fin. (₹ in Thousand)	
1)	Procurement of general use IT equipment	L/S	72738000	1	72738.00	1	72738.00	
2)	Procurement of Engineering survey equipment	L/S	20047000	1	20047.00	1	20047.00	
3)	Establishment of GIS/ MIS Cell (New)	L/S	2434000	1	2434.00	1	2434.00	
4)	Strengthening of GIS/ MIS Cell (Existing)	L/S	9903.00	1	9903.00	1	9903.00	
5)	Procurement of time series Satellite Images	L/S	2200000	1	2200.00	1	2200.00	
6)	Hiring of services for GIS survey, preparation of base spatial	L/S	5480000	1	5480.00	1	5480.00	
7)	Hiring of Services for Development of software application	L/S	23800000	1	23800.00	1	23800.00	
8)	ERP for office automation	L/S	-	-	0.00	-	0.00	
9)	Capacity building of PMU staff on MIS/ GIS. Aerial Monitoring and ICT environment	L/S	6200000	1	6200.00	1	6200.00	
10)	Hiring of Resource Persons (additional)	L/S	3780000	1	3780.00	1	3780.00	
4.1.8	Construction of Training Centres	No.	20000000	5	100000.00	4	80000.00	
4.1.9	Procurement of Equipment and Tools to PMU	L/S	30000	168	5040.00	168	5040.00	
1)	Rented accommodation for office space for 2 DPMU	L/S	20000	840	16800.00	840	16800.00	
2)	Rented accommodation for office space for 10 BPMU	L/S	1000000	7	7000.00	7	7000.00	
3)	Furniture & office-equipments. (NewPMUs)	L/S	670000	12	8040.00	12	8040.00	
4)	Replacement/ updation of Furniture	L/S	115860000	1	115860.00	1	115860.00	
5)	Transport facilities at PMU Procurement of 3 vehicles (SPMU 3) and hiring of 24 No. MUV (SPMU 2,DPMU 8,BPMU 14), 20 no. motor cycles, Scooters 20 No.	L/S	L/S	L/S	10000.00	L/S	10000.00	
6)	Rental accommodation for extension officers (70 sites)	L/S	L/S	L/S	3000.00	L/S	3000.00	
7)	Publicly events, public awareness materials, inaugural ceremonies of sub projects	MMs	60000	192	11520.00	192	11520.00	
8)	Hiring of support services	MMs	60000	10	600.00	0	0.00	
9)	Hiring of Nutrition expert	L/S	61040000	1	61040.00	0	0.00	
10)	Agricultural machinery and equipment for demonstration activities	L/S	L/S	L/S	10000.00	L/S	30000.00	
11)	Project Operational expenses	L/S	L/S	L/S	20000.00	L/S	10000.00	
12)	Countermeasures for COVID-19	L/S	L/S	L/S	146000.00		119000.00	
4.2	Strengthening of Extension Service Function				29000.00		39000.00	
4.2.1	Preparation of Information, Education and Communication (IEC) Material for Dissemination							
1)	Posters	L/S	500000	L/S	500.00	L/S	500.00	
2)	Wall writings & fixing of posters	No.	2000	306	612.00	306	612.00	
3)	Street plays on present situation and improvement	No.	6000	306	1836.00	306	1836.00	
4)	Publication of handouts and manuals	L/S	L/S	L/S	1050.00	L/S	6050.00	
5)	Preparation of video programs	No.	50000	16	800.00	16	5800.00	
6)	Display of shows in project villages	No.	5000	306	1530.00	306	1530.00	
7)	Farmers' fair in each Cluster	No.	350000	30	10500.00	30	10500.00	
8)	Dissemination of technology through demonstration	No.	10000	1184	11840.00	1184	11840.00	
4.2.2	Capacity Development of Agriculture Extension Staff				12000.00		2000.00	
1)	Farming practices on common and exotic vegetables with field exercises	No.	125000	24	3000.00	4	500.00	
2)	Protected cultivation with field exercises	No.	125000	24	3000.00	4	500.00	
3)	Integrated Pest Management	No.	53000	24	1272.00	4	200.00	

Provisions proposed to be curtailed by ₹ 2.70 Cr.

0

Components/Activities	Unit	Unit Price	Existing Provisions		Proposed revisions		Remarks
			Phy.	Fin. (₹ in Thousand)	Phy.	Fin. (₹ in Thousand)	
4) Integrated Nutrition Management	No.	53000	24	1272.00	4	200.00	
5) Soil analysis and soil health management	No.	53000	24	1272.00	4	200.00	
6) Market-led extension	No.	53000	24	1272.00	4	200.00	
7) Food diversification/ Nutrition improvement/ Gender mainstreaming	No.	53000	24	1272.00	4	200.00	
4.2.3 Capacity Development of Engineering Staff	No.	53000	24	6000.00		1000.00	
1) Application of the Guideline and Check list	No.	53000	24	1272.00	4	200.00	
2) Data preparation and record keeping of pre-condition of each sub-projects.	No.	53000	24	1272.00	4	200.00	
3) Design of Pumping machinery.	No.	53000	24	1272.00	4	200.00	
4) Collaboration with extension officers for O&M activities/ Gender mainstreaming	No.	53000	24	1272.00	4	200.00	
5) Organization of design documents	No.	53000	24	1272.00	4	200.00	
4.2.4 Strengthening of Research- Extension-Farmer Linkages and Joint Visits	No.	200000	25	5000.00	25	5000.00	
4.2.5 International/ National/ State level workshop/seminars				29000.00		27000.00	
1) Organisation of Seminar /National workshops	No.	2500000	4	10000.00	4	10000.00	
2) Organisation of International workshops	No.	7500000	2	15000.00	2	15000.00	
3) State level workshop/seminars	No.	250000	16	4000.00	8	2000.00	
4.2.6 Overseas Training, Exposure/ Study visits of Project staff and other stakeholders	No.	3500000	10	35000.00	5	35000.00	
4.2.7 Upgrading of infrastructure of State Agriculture Management and Extension Training Institute (SAMETI)	L/S	L/S	1	30000.00	1	10000.00	
4.3 Baseline Survey and Impact Assessment				8000.00		8000.00	
4.3.1 Conduct baseline survey	L/S	L/S	1	2000.00	1	2000.00	
4.3.2 Conduct mid-line survey	L/S	L/S	1	2000.00	1	2000.00	
4.3.3 Conduct end-line survey	L/S	L/S	1	3500.00	1	3500.00	
4.4 Gender Mainstreaming	L/S	L/S	L/S	15000.00	L/S	7500.00	
Total (4)				1575000.00		1462649.00	Provisions proposed to be curtailed by ₹ 0.75 Cr.
Total (1+2+3+4)				6599980.00		6599980.00	Cr.
5. Price Escalation				569000.00		569000.00	No Reappropriation proposed
Category A Total (1+2+3+4+5)				7168980.00		7168980.00	No Reappropriation proposed
Category B Consultancy Services				546000.00		546000.00	No Reappropriation proposed
Category C Physical Contingency				358000.00		358000.00	No Reappropriation proposed
Grand Total of Eligible Portion (Category A+B+C)				8072980.00		8072980.00	
Non Eligible Portion							
Administrative cost				404000.00		404000.00	
GST				1134000.00		1134000.00	
Import Tax/ Other Tax				17000.00		17000.00	
Front End Fee				16000.00		16000.00	
Interest During Construction				462000.00		462000.00	
Grand Total of Non Eligible				2033000.00		2033000.00	
Grand Total (Eligible+Non-Eligible)				10105980.00		10105980.00	

INDICATIVE COST MODEL
LIVELIHOOD SUPPORT ACTIVITY: DAIRY FARMING
Total Project Targets: 690 No. of Beneficiaries (Tentative)
Indicative Cost model of Dairy Farming
(Exotic/ Crossbred/ High yielding Indigenous Cows/ Buffaloes)

Sr. No.	Particulars	Project Assistance (₹ Max.)	Remarks
1	Project assistance @ 80% on purchase of 2 milch animals @ ₹50,000 per cattle Max. (Cows/ Buffaloes)	100000	Project assistance for cattle purchase shall be released on the basis of valuation report of the Govt. Veterinary Officer and on the production of valid claim documents by the beneficiary followed by physical inspection & certification by the concerned DPMs/ BPMs & core team constituted/ to be constituted for the said purpose.
2a	Project assistance @ 80% on Renovation of existing shed, Manger construction/ Construction of Shed including C/O Chambers for urine and cow dung collection, etc. (Standard estimate basis)	80000	In line with the DPR of HPCDP Phase-II & amended as per minutes of review meeting under the Chairmanship of Hon'ble Chief Minister, Himachal Pradesh held on 13 th August, 2024, minutes circulated vide DAHP Letter No. Agr. H(II)F (5)4/77-XIX dated 06 th September, 2024.
2b	Project assistance @ 80% on Construction of Water Storage Tank (9 cum) for assured water availability (drinking and cleaning purposes of animals) including Pipe (200 mtr. Length) and one pump unit/ Installation of Borewell (Standard estimate basis)	80000	
3	Project assistance @ 80% on Insurance Charges for 1 st year (5% of cost of animal)	5000	
4	Project assistance @ 80% on Cost of concentrate for initial 3 months (4 kg per animal per day @ ₹ 20/ kg)	11500	
5	Project assistance @ 80% on Mineral Mixtures for initial 3 months (0.05 kg per day @ ₹ 80/ kg)	500	
6	Project assistance @ 80% on Miscellaneous (Transportation of animals, Milk cans, Milking buckets, Chaff cutter, Milk cooler, Paneer press, etc.)	20000	
	Total Project assistance (Max.)	297000	

Notes:-

1. Maximum project assistance shall not be more than ₹ 297000/- (₹ Two Lakh Ninety Seven Thousand only) per unit of two milch animals (cows/ buffaloes) in any case.
2. Project assistance for construction related works like Cowshed, Manger, WST, Pipe, Pump, etc. shall be released only after inspection, assessment by the concerned PMU officials and production of valid claim documents.
3. The particulars of 2a and 2b are subject to the pre-existing status of these items/ interventions *e.g.* If an individual already has a cowshed, he is not eligible to claim the construction cost; however, he may claim the cost of renovation or updation of his cowshed. However, the estimate of construction/ renovation shall have to be prepared/ approved by the concerned BPM.
4. The beneficiary has to submit self-attested declaration regarding establishment of the sanctioned livelihood support activity & maintaining the assets created with the project assistance, at least for a period of five years from the date of establishment.
5. Project assistance shall be released to the beneficiary after physical inspection through bank accounts, only, after satisfactory report of the inspecting authority & concerned core team.



Project Management Units Revised Strength of Staff

S.No	Name of Post	SPMU	DPMU	BPMU	SCTC	TOTAL
1	2	3	4	5	6	7
From DoA/Contract						
1	Project Director	1	0	0	0	1
2	Deputy Project Director	3	0	0	0	3
3	District Project Manager	0	4	0	0	4
4	Finance Officer	1	0	0	0	1
5	Senior Consultant	1	0	0	0	1
6	IEC Consultant	1	0	0	0	1
7	Subject Matter Specialist	3	4	0	0	7
8	Block Project Manager	0	0	15	0	15
9	SCTC Disseminator	0	0	0	2	2
10	Agr. Development Officer	1	2	12	0	15
11	Agriculture Extension Officer	0	0	14	0	14
	Total	11	10	41	2	64
From Outsource						
1	Office Manager	1	0	0	0	1
2	Manager (HRD)	1	0	0	0	1
3	Office Manager cum Accountant	0	4	15	0	19
4	Accountant	1	0	0	0	1
5	Agri. Expert	0	4	30	0	34
6	Agri. Officer	0	4	15	0	19
7	Agri. Extension Officer	1	0	32	0	33
8	Planning Officer	1	0	0	0	1
9	Private Secretary	1	0	0	0	1
10	Senior Marketing Officer	1	0	0	0	1
11	Marketing Officer	0	4	0	0	4



12	Construction Engineer	1	4	16	0	21
13	Design Engineer/Sr. Design Engineer	1	4	0	0	5
14	H.D.M.	1	0	0	0	1
15	Junior Engineer	1	0	33	0	34
16	J.D.M/TA (Drawing& Estimates)	0	4	15	0	19
17	Surveyor/ Tech.Assistant (Survey)	0	8	0	0	8
18	Draughtsman	0	4	0	0	4
19	Supervisor	0	0	32	0	32
20	I.T Experts	2	0	0	0	2
21	MIS &GIS Operator	1	4	0	0	5
22	MIS &GIS Technician (ICT work plan in MoD)	1	0	0	0	1
23	Computer Assistant	4	8	15	1	28
24	Drivers	2	0	0	0	2
25	Office Assistant	5	4	30	1	40
26	Office Attendant	4	8	15	2	29
27	Factory worker (SCTC)	0	0	0	4	4
28	Cultivation worker(SCTC)	0	0	0	3	3
29	Office upkeep	1	4	15	0	20
30	Night Watch Man	1	4	15	1	21
	Total	32	72	278	12	394
	Grand Total(A+B)	43	82	319	14	458

Proposed Cost norms for different workshops, trainings, seminars & exposure -cum-study visits and meetings in HPCDP Phase-II.

**A) For Senior Project Staff and Equivalent Officers in Line Departments
(PD, DPD, DPM, SMS, BPM, Experts and other class one officers)**

Sr. No.	Activity	Unit	Propose Norms/Rates	
			Within State	Outside State
1	Training Material	Per person per event	Up to ₹1000/-	Up to ₹ 1000/-
2	Boarding (Breakfast Lunch Dinner)	Per person per day	Up to ₹1500/- plus taxes	Up to ₹ 2000/- plus taxes
3	Special Lunch/Dinner (One such lunch/dinner per event)	Per person per event	Up to ₹1500/- plus taxes	Up to ₹ 2000/- plus taxes
4	Refreshments	Per person per day	Up to ₹300/-	Up to ₹350/-
5	Lodging	Per person per day	Up to ₹2000/- plus taxes at non-luxury accommodation in HPTDC	Up to ₹3000/- plus taxes (for non-Metropolitan cities and up to ₹4500 plus taxes in Metropolitan cities.
6	Venue charges	Per event	As per actual	As per actual
7	Travel Cost	Per person per event	As per entitlement	By Air (economy class) where journey is time consuming and may require at least 4-5 days journey to attend around 3-4 days programme.

B) Project Staff and communities

Sr. No.	Activity	Unit	Proposed Norms/Rates	
			Within State	Outside State
1.	Training Material	Per person per event	Up to ₹500/-	Up to ₹500/-
2.	Boarding (Breakfast Lunch Dinner)	Per person per day	Up to ₹800/- plus taxes	Up to ₹1200/- plus taxes
3.	Refreshments	Per person per day	Up to ₹200/-	Up to ₹250/-
4.	Lodging	Per person per day	Up to ₹1250/- plus taxes	Up to ₹1500/- plus taxes (for non-Metropolitan cities) and up to ₹2000/- plus taxes in Metropolitan cities
5.	Venue Charges	Per event	As per actual	As per actual
6.	Travel Cost	Per person per event	As per HRTC Bus Fare or as per entitlement	For Staff - For journey up to 24 hours - As per entitlement For journey more than 24 hours - as per approval by Project Director For communities - AC-3 tier for places connected by Rail. For others – not exceeding State Transport Rates

Front Line Staff includes Agriculture Expert, Agriculture Officer, Agriculture Extension Officer, JE, Surveyors, Ministerial staff, Draughtsman, KVA members, SHG members and other community members, etc.

C) Proposed norms for Governing Council/Executive Committee and JICA Mission meeting and Workshops and other compatible National and International Dignitaries.

Sr. No.	Activity	Unit	Proposed Norms
1.	Training Material	Per person per event	Up to ₹2500/-
2.	Refreshments/High Tea	Per person per day	Up to ₹750/- plus taxes
3.	Special Lunch/Dinner	Per person	Up to ₹2500/- plus taxes
4.	Venue Charges	Per event	As per actual
5.	Souvenir to dignitaries/participants	--	Up to ₹25000/- plus taxes per dignitary Up to ₹5000/- plus taxes per participant

D) PROPOSED NORMS FOR HONORARIUM

LOCAL/CLUSTER LEVEL EXPERT/MASTER TRAINER (Sub Project, DPMU, BPMU Level Trainings)		
Sr. No.	Activity	Proposed Norms
1	Honorarium	1. KVA Trainer up to ₹ 750/- per session 2. Front line Staff/Cluster level, Technical Resource person up to ₹1000/- per session
2	Travelling expenses	As per actual
3	Boarding & Lodging	Up to ₹2500/- per day
STATE LEVEL EXPERT (Trainings at DPMU/SPMU)		
1	Honorarium	Up to ₹2000/- per session
2	Travelling expenses	As per actual subject to AC 1 st Class or Equivalent
3	Boarding & Lodging	Up to ₹3500/- per day
NATIONAL LEVEL EXPERT (SPMU Level Training)		
1	Honorarium	Up to ₹2500/- per session
2	Travelling expenses	As per actual subject to Air Fare or AC 1 st Class or Equivalent
3	Boarding & Lodging	Up to ₹5000/- per day
INTERNATIONAL LEVEL EXPERT (SPMU Level Training)		
1	Honorarium	Up to ₹5000/- per session
2	Travelling expenses	As per actual subject to Air Fare or AC 1 st Class or Equivalent
3	Boarding & Lodging	Up to ₹10000/- per day

The proposed charges for stay in Govt. accommodations for trainers/resource persons/institutional experts/NGOs and contractual project staff who will be engaged by the project for conducting trainings/workshops/exposure visits and other project related activities will be charged at par with the rates applicable for officials/officers on Govt. duty. The above proposed rates will also be applicable to the resource persons/institutions/NGOs engaged by the project for conducting exposure visits within and outside the state.

