



OFFICE OF HP STATE COMPENSATORY AFFORESTATION FUND
MANAGEMENT AND PLANNING AUTHORITY (HP STATE CAMPA),
ARANYA-BHAWAN, TALLAND, SHIMLA - 171 001



No. Ft. CAMPA/2012/Adhoc-CAMPA/APOs/Vol. VII

Dated: Shimla-1, the
17 MAR 2023

To:

✓ The Chief Executive Officer, National Authority,
Ministry of Environment, Forest and Climate Change, GoI
1st Floor, Vayu Wing, Indira Paryavaran Bhawan
New Delhi- 110003

Subject: Submission of Annual Plan of Operation (APO) for the year 2023-24.

Sir,

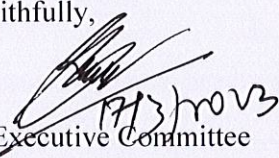
Annual Plan of Operation (APO) of HP State Authority CAMPA for the financial year 2023-24 amounting to Rs. 237.22 crores, approved by Steering Committee of H.P State Authority CAMPA, is sent herewith for favour of kind perusal and approval. A copy of Proceedings of Steering Committee meeting held on dated 24.02.2023 is enclosed herewith. The APO containing physical and financial details of works proposed to be undertaken during the financial year 2023-24 under the sectors of Compensatory Afforestation (CA), Catchment Area Treatment Plans (CAT Plans), Integrated Wild Life Management Plan (IWMP), Net Present Value (NPV), Interest and others is enclosed as **Annexure - I** alongwith **Annexures II & IV** on the prescribed format and **Annexure - III** will be submitted separately. Sector wise details of the proposed APO are given as under:

Sr. No.	Name of Sector	Proposed Outlay for 2023-24 (Rs. in crores)
1	Compensatory Afforestation (CA)	25.00
2	Catchment Area Treatment (CAT) Plans	24.00
3	Integrated Wild Life Management Plan (IWMP)	16.73
4	Net Present Value (NPV)	166.96
5	Interest	3.50
6	Others	1.03
	Total	237.22

It is, therefore, requested that the APO amounting to Rs. 237.22 crores for the financial year 2023-24 may kindly be approved at the earliest so that the works in the field can be carried out accordingly.

Encls: As above/-

Yours faithfully,


Chairperson, Executive Committee
H.P. State Authority, CAMPA-cum-
Pr. Chief Conservator of Forests (HoFF)
Himachal Pradesh, Shimla-1

PROCEEDINGS OF 6TH MEETING OF STEERING COMMITTEE OF HP STATE COMPENSATORY AFFORESTATION FUND MANAGEMENT & PLANNING AUTHORITY (HP STATE AUTHORITY CAMPA) UNDER THE CHARMANSHIP OF SH. PRABODH SAXENA, CHIEF SECRETARY TO THE GOVT. OF HIMACHAL PRADESH IN ALLERSLIE COMMITTEE ROOM, HP SECTERATE HELD ON 24TH February 2023.

The list of the participants is attached as *Annexure-1*

At the outset, Sh. Nagesh Guleria, Chief Executive Officer HP State CAMPA - cum- Addl. Pr. Chief Conservator of Forests welcomed Sh. Prabodh Saxena, Chief Secretary to the Govt. of H.P –cum- Chairman Steering Committee, members and other invitees of Steering Committee of the HP State Authority CAMPA to the meeting. Thereafter, the Agenda Items were taken up for discussion and decision. The Chief Executive Officer HP State CAMPA made a detailed presentation giving the progress of implementation on various decisions of the 5th Steering Committee, status of implementation of approved decisions and APOs for FY 2021-22, 2022-23 and proposed Budget Estimates in the Annual Plan of Operations for the Financial Year 2023-24 as detailed below:

AGENDA ITEM -6.1:

Action Taken Report on the decisions taken in 5th meeting of Steering Committee held on 25.03.2022

Agenda Item	Action Taken	Decision Taken
Agenda item -3.7 Establishment of FSI-Cell under State Authority	Vide order dated 10-02-2021 FSI Cell stands constituted, FSI has not yet deputed two representatives as desired vide above referred order.	Matter still pending and it was decided to take up the matter with concerned authority again.
Agenda item – 5.2 Progress Report for the Financial Year 2020-21	The Steering Committee was apprised that the progress report for the financial year 2020-21 has been submitted to National Authority, CAMPA and no further faction was required.	The Committee dropped the Agenda Item.
Agenda item- 5.3 Progress of Expenditure for the Financial Year 2021-22	The Steering Committee was apprised that the progress report for the financial year 2021-22 was being discussed in detail at agenda item no. 6.2., therefore it was proposed to drop this agenda item from here.	The Committee dropped the Agenda Item from here.

Agenda Item	Action Taken	Decision Taken
Agenda Item – 5.4 Approval of APO for the F.Y. 2022-23	The Steering Committee was apprised that the APO to the tune of Rs. 190.23 crore against the proposed APO amounting of Rs. 215.95 crore for the F.Y. 2022-23 was approved by the National Authority. The Steering Committee was further apprised that the progress against the approved APO was being discussed under the agenda item no. 6.3., therefore it was proposed to drop this agenda item from here.	The Committee dropped the Agenda Item from here.
Agenda Item – 5.5 Demarcation, Survey & Geo- referencing of Forest Boundaries of HP using DGPS	The Steering Committee was apprised that the proposal was not approved by the National Authority. Therefore it was proposed to drop this agenda item.	The Committee dropped the Agenda Item.
Agenda Item – 5.6 Any Other Item with the permission of the Chair	<p>i) The Chairman of the Steering Committee in its meeting held on 25.03.2022 suggested that there should be a proper monitoring mechanism for areas from where Lantana Removal activities so that the funds for the same may not be allotted again.</p> <p>The Chairman was apprised that three Committees has been constituted to study the impact of rehabilitation of Lantana infested areas, by the HP State Authority CAMPA which includes DFO/ACFs of different Circles and the Committee members are working as per the ToR specified. The consolidated report will be placed before the Steering Committee for perusal after completion of the task.</p> <p>ii) Purchase of drone form CAMPA funds for monitoring of illegal felling in forest areas.</p> <p>The Steering Committee was apprised that the funds amounting to Rs. 3.11 crore were allotted to the IT wing of the HP Forest Department and 7 Nos of drones amounting to Rs. 1.71 crores have been purchased during FY 2022-23.</p>	<p>The Steering Committee asked that the consolidated report to be placed before the Steering Committee for perusal after completion of the task during its next meeting.</p> <p>The Steering Committee decided that drone for monitoring of illegal felling and other may not be purchased in future and this activity may be got executed on outsource basis. The item is dropped from here.</p>

AGENDA ITEM- 6.2:

Revised APO-cum-Progress Report for the Financial Year 2021-22

The steering committee was appraised that, APO for the F.Y. 2021-22 amounting to Rs. 138.10 crore was approved by National Authority and expenditure amounting to Rs. 94.77 crore was incurred against the approved APO. Further, the Committee was appraised that certain revision and minor changes were affected in the APO at the time of execution of works as per field requirement. The Sector-wise revised APO-cum- progress report was placed before the Steering Committee for favour of perusal and approval as detailed below:

SN	Name of Heads/Sectors	APO Approved	Expenditure
			Rs. in crore
1	Compensatory Afforestation	17.00	16.35
2	Catchment Area Treatment Plans	25.00	15.36
3	Integrated Wild Life Management Plan	16.80	12.10
4	Net Present Value of Forest Land	77.29	50.18
5	Interest	2.00	0.78
6	Others	0.01	0.0043
	Total	138.1	94.77

Decision Taken: The Steering Committee desired that in future, physical progress should also be given along with the expenditure statement. The Steering Committee approved the revised APO and expenditure incurred during the year 2021-22.

AGENDA ITEM - 6.3:

Progress of expenditure for the year 2022-23

The Steering Committee was apprised that that the APO for the F.Y. 2022-23 amounting to Rs. 190.23 crore was approved by the National Authority CAMPA. A sum of Rs. 140.01 crore was released by the GoHP; and a sum of Rs. 49.78 crore was spent upto 23.02.2023 against the approved APO. It was further apprised that remaining works are in progress and the final achievement will be placed before the Committee in the next meeting after closing of the financial year.

Decision Taken: The Chairman directed to gear up the pace of the expenditure to achieve the targets.



AGENDA ITEM - 6.4:

Annual Plan of Operation (APO) for the financial year 2023-24

Sector wise APO for the financial year amounting to Rs. 237.22 crore was placed before the Steering Committee for approval. The Member Secretary apprised the Steering Committee that this year a little increase in the APO has been proposed because of the some of new activities discussed and decided in the Governing Body meeting Chaired by Hon'ble Chief Minister, Himachal Pradesh.

Sr. No.	Name of Sector	Proposed Outlay for 2023-24 (Amount in Rs.)
1	Compensatory Afforestation (CA)	25.00
2	Catchment Area Treatment (CAT) Plans	24.00
3	Integrated Wild Life Management Plan (IWMP)	16.73
4	Net Present Value (NPV)	166.96
5	Interest	3.50
6	Others	1.03
	Total	237.22

Decisions Taken: After detailed deliberations, the Steering Committee approved the APO proposed for the FY 2023-24 with following suggestions:

- The fencing of Forest areas as proposed under NPV sector [Rule 5(2)(d)] should be need based and should be fulfilling purpose for which it is undertaken.
- While discussing the APO of Lantana removal it was suggested by Pr. Chief Conservator of Forests –cum- CWLW that the correct nomenclature should be ecological restoration of degraded areas. The forests have degraded due to infestation by Lantana which is an Invasive alien species and other weeds like Parthenium. The degradation can be seen in terms of loss of biodiversity, higher run off, suppression of regeneration and suppression of root stock already present. The focus of ecological restoration is to bring back the forests to its pristine state. This can be achieved if the infestation of Invasive Alien Species is tackled on a focused basis and the areas are treated as per the strategy of treating Invasive Alien Species formulated by HPFD in 2010. The APO's shall be prepared as per the existing strategy and no deviation shall be permissible.

The Chief Secretary-cum-Chairman Steering Committee agreed with the suggestion and asked Chief Executive Officer CAMPA to implement the suggestion and correct the nomenclature.

- The plantation of 256 hac in degraded areas to be undertaken under CAMPA (NPV) should be on estimate basis and good quality plants should be planted in these areas to ensure its survival.
- For each such plantation the Forest Guard of that beat should make exclusively responsible for the plantation, by the CCFs/CFs concerned.
- It was decided that the Lantana Management is a specialist job and Front line staff of HPFD and the communities should be given trainings for Management of Lantana infested areas.
- For control burning of the Lantana infested areas should be availed especially when the Lantana bushes are seed bearing.

AGENDA ITEM - 6.5:

Annual Reports for the F.Y. 2015-16 and 2016-17

The Steering committee was apprised that the accounts for the year 2015-16 and 2016-17 have been converted on double entry accounting system and the annual statement of accounts (Balance Sheet) have been audited & certified by the AGHP. Accordingly, the Annual Reports for the F.Y 2015-16 and 2016-17 have been prepared. The Annual Statement of Accounts (Balance Sheet) for the F.Y. 2017-18 has been prepared and audited by the AGHP. The certification of the same by the AGHP is awaited. Conversion of accounts for the balance years 2018-19 to 2020-21 are under active progress.

Annual reports for the F.Y. 2015-16 and 2016-17 were placed before the Committee for its approval.

Decision Taken: The Steering Committee approved the Agenda Item.

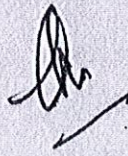
AGENDA ITEM - 6.6:

FCA Proposal for handholding User Agencies by QCI Accredited Agencies

The Steering Committee was apprised that in the State of Himachal Pradesh, various agencies and Government departments referred as User Agencies find it difficult in compilation of documents as part of proposal for obtaining approval of Government of India for diversion of forest land for non-forestry purpose under the provision of FCA Act, 1980. Such difficulties arise due to shortage of staff, lack of expertise and inability to have internal environment and forest cell in the concerned line departments.

It was proposed that this problem can be addressed by making available qualified expert consultants who can hand hold the User Agencies in preparation of proposals under FCA 1980. For this purpose QCI-NABET has developed the Accreditation Scheme for Forest Clearance consultant Organization intending to take up Forest Clearance in the State of Himachal Pradesh. The QCI-NABET shall grant accreditation to Forest Clearance Consultants Organization for undertaking Forest Clearance and preparation of Quality report in accordance with the rules/guidelines prescribed/specified by the MoEF&CC, GoI under FCA Act, 1980. For this purpose the QCI has demanded Rs. 15.00 lac per year and total Rs. 45.00 lac for three year. The detailed proposal was placed before the Steering Committee for its consideration and approval.

Decision Taken: The Steering Committee approved the proposal and it was decided that the funds to the tune of 45 lakhs (15 lakh per year) be utilized from NPV.



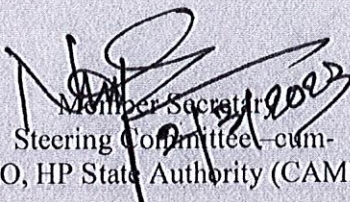
AGENDA ITEM - 6.7:

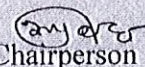
Deployment of staff in the office of Integrated Regional Office (IRO) Shimla to expedite the FCA Cases

The Steering Committee was apprised that under CAMPA Authority the powers are vested with the Governing Body under Section 11(5) of CAF Act, 2016 for creation of posts against the funds available under interest component. The matter was discussed in the Governing Body meeting held on 20.02.2023 to provide man power for Integrated Regional Office (IRO) for expediting the clearance of the FCA cases as well as the various processes in the forest department /CAMPA office for which five numbers of IT/Computer Operators are required as per the decision taken in the Governing Body meeting. The Steering Committee was apprised that the tentative expenditure per month for hiring services of these five personal will be approximately Rs. 1.30 lac. These IT/Computer Operators will purely be on temporary basis and their service will be hired from outsourcing agency.

Decision Taken: The Steering Committee approved the proposal to hire five nos. of IT/Computer Operators purely on temporary basis through Outsourcing Agency.

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


Member Secretary
Steering Committee -cum-
CEO, HP State Authority (CAMPA)


Chairperson
Steering Committee HP State Authority
-cum- Chief Secretary GoHP



वसुधैव कुटुम्बकम्
ONE EARTH • ONE FAMILY • ONE FUTURE

**HIMACHAL PRADESH
STATE COMPENSATORY AFFORESTATION
FUND MANAGEMENT AND PLANNING AUTHORITY
(STATE AUTHORITY)**

ANNUAL PLAN OF OPERATIONS (APO)

FOR THE FINANCIAL YEAR 2023-24

Aranya-Bhawan, Talland, Shimla -171001.

Telefax: 0177-2629750; 2623457

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ANNUAL PLAN OF OPERATION (APO) 2023-24

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Preface

The Ministry of Environment Forest and Climate Change, Government of India has notified the Compensatory Afforestation Fund (CAF) Act, 2016 and CAF Rules, 2018. The APO for the year 2023-24 has been formulated in accordance with the provisions of CAF Act and CAF Rules.

The APO contains proposals of site-specific plans of compensatory afforestation (CA), Catchment Area Treatment plans (CAT Plans), Integrated Wildlife Management Plan stipulated in the FCA cases approved under FCA 1980 for diversion of forest land for non-forestry purposes for their implementation during the financial year 2022-23.

The APO has been formulated in four parts containing total nineteen chapters. Part-I of the APO contains chapters 1 to 7 pertaining to the brief history and past performance. Part-II of the APO has been divided into six chapters from 8 to 13 which include physical and financial proposals of site-specific plans of CA, CAT Plans, Integrated Wildlife Management Plans and Others allied works for their implementation during the year. Similarly, Part- III of the APO is divided into three chapters from 14 to 16 which elaborate on the proposals of non site-specific plan of Net Present Value (NPV) for undertaking forestry and other works. It also incorporates Annual Budget of State Authority out of Interest from State Fund and APO thereof during the year 2023-24. Part-IV of APO further provide information regarding measurable output of physical activities and period required for achieving the same into three Chapters from 17 to 19.

Part-II and Part-III of the APO for the year 2023-24 find mention of the allotment of funds under site specific plans and non site-specific plans separately. The physical and financial proposals made under site specific plans and non site-specific plans have also been detailed in Part-II and Part-III of the APO.

This APO has been formulated for the implementation of site specific and non site-specific plans and execution of proposed works during the financial year 2023-24.

Form-VI
Annual Budget proposal of State Authority for financial year 2023-24
Submitted along with the Annual Plan of Operation

[See rule 35]

S. No.	Description	Current Financial Year	Last Financial Year
(Amount in Rupees)			
1	a. Opening balance of funds received from National Authority as on 1 st April	0	0
	b. Opening balance of loans/grants etc. received as on 1 st April	0	0
2	Estimated Annual receipt of State Authority	8856525789	1724854175
	(a) Receipt of fund by State Authorities from user agencies	1974144774	1578090393
	(b) Receipt of accrual of interest on State Fund	0	0
	(c) Receipt of Grants/ loans/others of State Authority	0	0
	(d) Any other income	0	0
3	Total estimated funds available with State Authority (as on 1 st April)	10830670563	17482219227
4. (i)	Annual proposed expenditure of State Authority out of State Fund		
	Activities to be undertaken from interest (Specify) under rule 6		
	Recurring Management Expenditure		
	i. Personnel services and benefits*	20000000	17000000
	ii. Administrative Expenses**	14000000	10000000
	iii. Other Administrative Expenses***	1000000	12000000
	iv. Any other expenditure	0	0
	Activities to be undertaken from Net Present Value (Specify) under rule 5		
	a. Non recurring Management Expenditure like Creation of Capital Asset	87008800	149328000
	b. Afforestation and other permissible activities	1255650000	216904000
	c. Expenditure on Ongoing Works	105000000	110000000
	d. Expenditure on New Works	201869500	949307400
	e. Monitoring and Evaluation Expenditure	20000000	30000000
4. (ii)	Compensatory Afforestation Works	250000000	250000000
4. (iii)	Catchment Area Treatment Works	240000000	260000000
4. (iv)	Wildlife Management works	167300000	163800000
4. (v)	Other (Specify)		0
	4. (v). (a) Soil & Water Conservation Plan (JP Cement)	8673400	0
	4. (v). (b) Green Belt Plan	1600500	100000
		0	0
4. (vi)	Total estimated expenditure out of grants/loan etc.	2372102200	2159439400
5. (i)	Estimated Gross Total Expenditure [4. (i)+ 4. (ii)+ 4. (iii)+ 4. (iv)+ 4. (v)+4. (vi)]		
	(ii) Estimated Payments to National Authorities out of funds received from user agency		
6	Total closing balance with State Authority		
	a. Closing balance of funds received from National Authority	0	0
	b. Closing balance out of receipt from User agencies	0	0
	c. Closing balance of grants/loans etc.	0	0

Declaration

The budget proposal as mentioned above has been approved and adopted by the State Authority.

Dated:


Member-Secretary
State Authority Executive
Committee

FORM – XII
ANNUAL PLAN OF OPERATION
(Rule 39 of Compensatory Afforestation Fund Rules 2018)

PART-I
BRIEF HISTORY AND PAST PERFORMANCE

Chapter-1

Forests in the State of Himachal Pradesh:

The State of Himachal Pradesh, having a geographical area of 55,673 sq km, constitutes 1.69% of the geographical area of the country. The State has three distinct regions viz the Shiwaliks with altitude upto 1,500 m, Middle Himalayan Region between 1,500 m to 3,000 m and the Himadris higher than 3,000 m. About one third of the area in the state is permanently under snow, glaciers and cold desert. The tree growth is minimal in this region due to harsh conditions. The average annual rainfall is about 1800 mm. The temperature varies from sub-zero to 35°C. The Yamuna, Satluj, Beas, Ravi and Chenab are the important rivers of the state.

The forests of the State can be broadly classified into Coniferous Forests and Broad-leaved Forests. Distribution of various species follows fairly regular altitudinal stratification. The vegetation varies from Dry Scrub Forests at lower altitudes to Alpine Pastures at higher altitudes. In between these two extremes, distinct vegetation zones of Mixed Deciduous Forests, Bamboo, Chil, Oaks, Deodar, Kail, Fir and Spruce are found. The richness and diversity of our flora can be gauged from the fact that out of total 45000 species found in the country; as many as 3295 species (7.32%) are reported in the State.

As per India State of Forests Report 2021, the forest cover in the state is 15,443 sq km which is 27.72% of the state's geographical area as compared to 14360sq km in the year 2001. Thus there is an increase of 1074sq km in forest cover over a period of two decades. In terms of forest canopy density classes, the state has 3,163 sq km (5.59%) under very dense forest, 7100 sq km (12.04%) under moderately dense forest and 5180 sq km (9.49%) under open forest.

The recorded forest area of the state is 37948 sq km which is 68.16% of its geographical area. The Reserved, Demarcated Protected, Un-demarcated Protected and Unclassified Forests constitute 4.96%, 33.87%, 42.26% and 18.91% respectively of the recorded forest area. (Source ISFR-2021)

The Growing Stock of Forests of Himachal Pradesh is 345.62 m cum and in TOF (Trees outside Forest) is 28.30 m cum .

The influence of State's Forests transcends well beyond its boundaries, significantly impacting the ecology and economy of Indo-Gangetic plains. The State has a population of 68.5million (2010-11 Census), of which 90% live in rural areas. A vast majority of this rural population is dependent upon the forests for variety of their daily needs including timber, fodder, firewood, fruits. Apart from this a substantial number of rural households also collect a variety of medicinal herbs from the forests for augmenting their income, thus providing them an additional source of livelihood.

The Forests of the state not only provide direct benefits but also is a host of other ecosystem services. These encompass, first and foremost, the class of regulatory services such as carbon sequestration; sediment control and soil conservation; ground water recharge; protection from extreme weather events and preservation of bio-diversity. Due to their immense potential as carbon sink, the forests of the State have an important role in contributing towards the INDC (Intended Nationally Determined Contributions) commitments of the country. These services, by their very nature; accrue beyond the boundaries of the State in which the forests are lying.

Himachal Pradesh is one of the premier states of the Himalayan region that forms catchment of main rivers of northern India and any degradation in the watersheds affect the flow of water and transport of sediments to the rivers and reservoirs downstream. Situated as it is in the fragile Himalayan region, a good forest cover in the State has a strategic role in flood control, water regulation and climate mitigation in the neighboring States. The maintenance of adequate forest cover in the state is therefore, of great importance also.

Keeping in view the above context there is an imminent need to maintain the integrity of the existing forest cover on one hand, and to bring more areas under forest cover on the other, to meet the growing environmental, ecological and social challenges. Under the Sustainable Development Goals (SDGs), the State government has set an target of bringing 30% of State's geographical area under forest cover by 2030 against the present 27.72%.As per the National Forest Policy also, in mountainous regions, two-third of the geographical area is required to be under forest cover in order to prevent erosion and land degradation and to ensure the stability of the fragile eco-system.

The National Wildlife Action Plan (2002-2016) has set a target of 10% of total geographical area under Protected Area Network in a State. Against this target, the state has brought 15.1%of the total geographical area of the State under Protected Area Network.

Chapter-2

Activities carried out in the State Last Five Years from CAMPA Funds

During last five years of 2018-19, 2019-20, 2020-21, 2021-22 & 2022-23 an amount of Rs. 464.48 crore has been utilized upto 31.12.2022.

The details of forestry and other activities carried out in the state during last five years from the CAMPA funds released by the Adhoc CAMPA are tabulated as under: -

Activities carried out in the State in last five years from of 2018-19, 2019-20, 2020-21 2021-22 & 2022-23 up to 31.12.2022:

Sr. No.	Item of Works	Units	Phy	Fin
1.1	CA Works:			
	Plantation	Hectare	3179.76	1658.83
	Advance Work	Hectare	3477.36	1612.96
	Nursery Development	Nos.	0	696.01
	Maintenance of old plantation	Hectare	54123.62	2165.78
	Contingency		0	181.31
	Total CA			6314.89
1.2	Non-CA Works		0	0
	ANR/RDF	Hectare	0	0
	Block Plantation	Hectare	0	0
1.2.1	CAT Plans		0	0
	Afforestation	Hectare	2108.49	936.26
	Maintenance of Plantation	Hectare	16433.25	477.21
	Nursery Development	Nos.	37649.6	581
	Soil Conservation Works	Nos.	229293	4220.48
	Other Ancillary Works	LS	3876	1520.84
	Infrastructure Development	Nos.	2365.5	1261.42
	Total CAT			8997.21
1.2.2	RIM Plantation Scheme	LS	0	0
	New Plantation	Hectare	0	0
	Maintenance of plantation	Hectare	0	0
	Other Ancillary Works		0	0
	Total RIM		0	0
1.2.3	Soil & Water Conservation Plan		0	0
	1. Afforestation	Hectare	1	1
	2. SC Works	Nos.	0	0

	3. Maintenance of plantation	Hectare	14	0.37
	4. Other Ancillary Works		2	4.5
	Total SWC Plan		17	5.87
1.2.4	Reclamation Plan		0	0
	Afforestation		0	0
	Maintenance of Plantations		0	0.04
	SC Works		0	0
	Other Ancillary Works		0	0
	Total Reclamation		0	0.04
			0	0
2	Wildlife related interventions		0	0
	2. Conservation of Flora & Fauna in and around GHNP Shamshi		0	403.54
	3. Wildlife Management Plan		0	0
	Total Wildlife		0	403.54
3	Working plan related works (Other than under State budget)		0	0
4	NPV		0	0
4.1	ANR (Fresh)	Hectare	33021.42	3905.04
4.1	ANR (Maint. & Subsidiary activities)	Hectare	64977.01	4526.9
4.2	Infrastructure		0	0
4.2.1	(a) Building for frontline staff (New Buildings)	Number	32	518.53
	(b) Building for frontline staff (Maint. of Buildings)	Number	378	673.91
4.2.2	Other Building (Pl specify) other than frontline staff	Number	0	0
4.2.3	Forest Boundary consolidation	Number	7808.53	440.1
4.2.4	Prevention of Forest fire		992890	997.52
4.2.5	Vehicles. Pl specify:			
	(a) 4 Wheeler Cars;		0	0
	(b) 4 Wheeler Utility Vehicles		0	0
	(c) 2 Wheelers.		0	0
4.2.6	Other Pl. specify Nursery Development, up-gradation of check posts and van thanas, publicity awareness, IT & communications, Bio-diversity protection and Management etc.	LS	106879.1	13143.9
4.2.7	(a) Security equipment: (1) electronic surveillance (GPS)		0	113.47

4.2.7	(b) Security equipment: (2) Fire arms.		0	21.11
4.2.8	Communication equipment/ maintenance expenditure		0	0
	Total NPV		1205986	24340.48
5	Green Belt		0	0
	Plantation	Hectare	0	0
	Maintenance of Plantations		30	2.06
	Soil Conservation Works	Number	0	0
	Total Green Belt		30	2.06
	Others		60	4.12
6	Interest		0	0
	Office Expenses		0	32.95
	Hiring of Vehicles		0	28.13
	Salary and Allowances to Hired Outsourced Staff		0	187.83
	Total Interest		0	248.91
7	Protected Area against the stipulation of Koldam)		0	6135.35
	G.Total			46448.85

Chapter-3

Forestry and other related schemes and activities carried out in the state in previous year from the funds received under other schemes of the Government

The details of major forestry and other activities carried out in the State during previous year, 2022-23 up to 31.12.2022 from the funds received under State Plan Schemes and Centrally Sponsored Schemes are tabulated as under: -

Sr. No.	Name of Scheme	Phy (in Ha)	Fin. (Rs. In lac)
1	2402- Soil Conservation Programme		
	Protective Afforestation, Soil Conservation & Demonstration	798.00	1607.56
	Total	798.00	1607.56
2	2406- Forestry and Wildlife Plan		
a	Grant-in- aid to NRMTDS	0	88.34
	Total	0	88.34
3	Communication & Building		
a	Repair of Buildings, Road & Paths	0	0
b	Regeneration of Chilgoza Pine	0	0
	Total	0	0
4	Forest Conservation Dev. & Regeneration		
a	Consolidation & Demarcation of Forests	0	0
b	Regeneration of Forests	0	0
c	Forest Fire Prevention and Management	0	1.91
d	Working Plan Organization	0	3.52
e	HP Forest Eco- system Climate Proofing Project (KFW)	1955.87	2542.06
F	HP Forest ecosystem Management & Livelihood Improvement (JICA)	1826.82	4780.00
g	Forest Fire Management Scheme	0	110.14
	Total	3782.69	7437.63
5	Social & Farm Forestry		
a	Maint. of plantation & Nurseries	0	0
b	Integrated dev. Project for source sustainability & climate resilient rainfed agriculture (IDP)	830.05	4136.85
c	Experimental Silvicultural Felling	87.00	32.68
d	Subsidiary Silvicultural Operations	0	59.14
e	National Mission for Green India Mission	50.00	7.90
f	Departmental State Forestry Programme	4353.70	2439.90
g	Community Based State Forestry Programme	63.5	234.16
h	Social Forest Programme (BASP)	0	0

	Total	5384.15	6910.63
6	Forest Produce		
a	Timber and other forest produce removed from forest by Govt agency	0	0
b	Timber and other forest produce removed from forest by Consumer and purchasers	0	0
c	Drift Wood and Confiscated forest produce	0	0
d	Establishment of Shuttle & Bobbin Factory	0	0
e	Collection and removal of Chil Pine from Forests	0	0
	Total	0	0
7	Environmental Forestry & Wildlife		
a	Wild Life	0	1242.50
b	Assistance for Dev of National Parks & Sanctuaries 10%	0	0
c	Expenditure on Wildlife Management and Nature Conservation	0	0
d	Expenditure on Improvement and Development of Wildlife Sanctuaries	0	0
e	Expenditure on intensive Management of Wildlife Sanctuaries	0	0.10
f	Expenditure on Development of Pin Valley National Park	0	0.26
g	Wildlife (state scheme)	0	0
h	Development of Himalayan Zoological Park & Pheasantry	0	0
	Total	0	1242.86
8	Zoological Park		
a	Development of Zoological Park & Pheasantry	0	359.76
b	Grant-in-aid to HP Zoo Conservation & Breeding Society	0	188.00
	Total	0	547.76
9	Afforestation & Ecology Development		
a	Compensatory Afforestation	0	0
b	Catchment Area Treatment Plan	0	0
c	Integrated Wildlife Management Plan	0	0
d	Net Present Value of Forest Land	0	0
e	Interest	0	0
f	Others	0	0
	Total	0	0
10	Agricultural Research & Education		
a	Department Forestry Research Scheme	0	0.06
b	Grant-in-aid to Dr. YS Parmar University of	0	0

	Horticulture & Forestry for Forestry Research		
	Total	0	0.06
11	Capital Outlay		
a	Govt Residential Buildings	0	258.18
b	Road & Bridges	0	222.24
c	Buildings	0	700.79
	Total	0	1181.21
12	Environment Forestry & Wildlife		
a	Wildlife	0	5.00
	Total	0	5.00
13	Zoological Park		
a	Buildings under Zoological Park	0	9.90
	Total	0	9.90
14	Centrally Sponsored Schemes		
I	Forest Conservation Dev & Regeneration		
a	Forest Fire Prevention & Management	0	13.17
	Total	0	13.17
II	Social & Farm Forestry		
a	National Mission for Green India 90%	0	72.00
b	Secure Himalayas	0	0
	Total	0	72.00
III	Environmental Forestry & Wildlife		
a	Assistance for Development of National Parks & Sanctuaries 90%	0	0
b	Expenditure on Intensive Management of Wildlife Sanctuaries	0	10.00
c	Expenditure on Development of Pin Vally National Park	0	2.34
	Total	0	12.34
	Total CSS	0	97.51
	G. Total	9964.94	18906.22

Chapter-4

Forest Area Diverted and Compensatory Afforestation carried out in the State of Himachal Pradesh since 1980

The year-wise details of total forest area diverted, total compensatory afforestation stipulated and total compensatory afforestation carried out in the State of Himachal Pradesh since 1980 are tabulated as under:

Year-wise Details of Forest Land Diverted, Total Compensatory Afforestation Stipulated and Compensatory Afforestation carried out in the State of Himachal Pradesh

Year	Total Forest Land Diverted	Total Compensatory Afforestation Stipulated		Total Compensatory Afforestation Carried Out		Year End Balance Compensatory Afforestation to be done	
		NFL (Ha)	DFL (Ha)	NFL (Ha)	DFL (Ha)	NFL (Ha)	DFL (Ha)
1980-81	0	0	0	0	0	0	0
1981-82	0.54	0	0	0	0	0	0
1982-83	45.66	0	40.2	0	0	0	-40.2
1983-84	100.3	16.33	167.94	0	0	-16.33	-167.94
1984-85	11.63	0	23.78	0	0	0	-23.78
1985-86	1063	0	2000	0	0	0	-2000
1986-87	282.1	30.18	503.84	0	0	-30.18	-503.84
1987-88	222.4	0	444.8	0	6	0	-438.8
1988-89	20.13	0	40.26	0	0	0	-40.26
1989-90	132.8	0	265.6	0	0	0	-265.6
1990-91	1109	57.65	2163.9	0	2	-57.65	-2161.9
1991-92	103.3	0	208.6	0	49	0	-159.6
1992-93	3.91	0	7.83	0	265	0	257.17
1993-94	129.9	0	265.66	43.87	384	43.87	118.34
1994-95	153.7	0	303.89	58	761	58	457.11
1995-96	222.6	0	445.27	0	236	0	-209.27
1996-97	22.13	0	57.28	0	374	0	316.72
1997-98	26.35	0	53.18	0	391	0	337.82
1998-99	435.7	0	887.35	0	423.18	0	-464.17
1999-2000	342.6	30.08	685.2	30.07	446	-0.01	-239.2
2000-01	315.9	0	817.05	0	800	0	-17.05

Year	Total Forest Land Diverted	Total Compensatory Afforestation Stipulated		Total Compensatory Afforestation Carried Out		Year End Balance Compensatory Afforestation to be done	
		NFL (Ha)	DFL (Ha)	NFL (Ha)	DFL (Ha)	NFL (Ha)	DFL (Ha)
2001-02	171.4	0	393.77	0	757	0	363.23
2002-03	204.7	0	497.91	0	1458	0	960.09
2003-04	201.52	6	403.04	0	771	-6	367.96
2004-05	141.99	0	310.57	0	1400	0	1089.43
2005-06	723.17	0	1448.45	0	1161	0	-287.45
2006-07	855.97	0	1730.72	6.8	752	6.8	-978.72
2007-08	385.93	0	801.14	0	1045	0	243.86
2008-09	394.32	0	809.43	0	325	0	-484.43
2009-10	972.29	0	1962.7	0	130	0	-1832.7
2010-11	1118.08	0	2253.5	0	59.7	0	-2193.8
2011-12	375.5	0	751	0	477.81	0	-273.19
2012-13	1060.38	0	2146.03	0	1362	0	-784.03
2013-14	237.88	0	476.41	0	2441	0	1964.59
2014-15	158.46	0	316.92	0	3220.35	0	2903.43
2015-16	352.45	0	704.9	0	1929.5	0	1224.6
2016-17	109.78	0	223.4	0	1245.49	0	1022.09
2017-18	466.17	1.75	501	0	1382.75	-1.75	881.75
2018-19	739.44	0	1478.88	0	581.69	0	-897.19
2019-20	391.48	0	527.299	0	568.32	0	41.021
2020-21	397.683	0	807.672	0	876	0	68.328
2021-22	556.4	0	946.07	0	954.36	0	8.29
2022-23	653.24	0	1307.479	0	1032	0	-275.479
G. Total	15411.883	141.99	30179.92	138.74	28067.15	-3.25	-2112.77

Monitoring & Evaluation

Monitoring and evaluation is an integral part of any program, project, or scheme that helps in keeping constant vigil on the efficacy of implementation process towards achieving the planned outcomes and goals. Three tier monitoring and evaluation of all development works is being carried out under CAMPA as detailed below:

First-tier monitoring: It involves in-house checking of forests and to review the completeness and quality of various forestry works by all levels of field officers. Norms for Mandatory Field Inspection as well as touring have been fixed. It is done by field functionaries up to the level of Chief Conservator of Forest as per Monitoring & Evaluation Protocol.

Second-tier monitoring: It involves independent monitoring of all types of departmental works selected through random sampling by M&E Wing of the department, headed by an officer of the rank of APCCF. Senior Forest Officers forming part of the Forest Headquarters located at Shimla and outside Shimla are also involved in the second-tier monitoring and evaluation of field works in order to use their experience in improving the implementation of field works. It is done as per Monitoring & Evaluation Protocol of HP Forest Department.

Third party monitoring: It is carried out through institutions/entities like the Universities, Forest Institute, other independent agencies of National repute etc.

The emerging technologies have thrown up many possibilities of improving the Monitoring and Evaluation protocol to make the exercise more effective and purposeful. Some of the emerging technologies proposed to be used in future are:

- Surveillance through drones.
- Integration of the process on GIS Platform.
- Application of Remote Sensing and Satellite Imagery.
- Use of web-based software/ technologies for online reporting.

With the introduction of this system, department will not only be able to increase the accountability at different levels but with regular evaluation and feedback to take timely corrective measures.

The third party monitoring and evaluation of the plantations raised from CAMPA funds during the years 2016-17,2017-18 and 2018-19 was got conducted in 39 forest divisions by Himalayan Forest Research Institute (HFRI) as per standard methodology.

The survival percentage of plants in all the Forest Divisions as well as for the entire State was classified into following categories:

S. No.	Category	Survival Per cent
1.	Below Average	0-30
2.	Average	31-50
3.	Good	51-70
4.	Very Good	71-100

In the state level, weighted average survival per cent of the plantations raised under different schemes is as under:

Weighted average survival under various schemes in Himachal Pradesh

Sl. No.	Name of Scheme	Weighted Average Survival (%)		
		2016-17	2017-18	2018-19
1.	Compensatory Afforestation	47.66	42.02	40.96
2.	CAT PLAN	36.06	36.54	34.46
3.	NPV	25.29	41.51	34.76
4.	Soil & Water Conservation	33.17	-	-

Monitoring of the works of the following years shall be carried out during 2023-24, process of selection of agency has already been initiated in which M&E of the financial year 2019-20 to 2021-22 and other activities of CAMPA like Soil & Water Conservation activities for the year 2016-17 to 2018-19 will be got Monitored and Evaluated.

Chapter-6

Schemes of APO for 2023-24

The Compensatory Afforestation Act (CAF) 2016 and the CAF Rules 2018, notified by the Ministry of Environment, Forest & Climate Change, Government of India provide that the funds deposited by the User Agencies for compensatory afforestation, additional compensatory afforestation, penal compensatory afforestation; Catchment Area Treatment (CAT) Plans; Wildlife Management Plans and other Plans approved in the FCA cases are to be utilized for the execution of site specific plans submitted with the approved FCA cases. The non-site specific funds of NPV are to be utilised on the activities defined separately in respect of the 80% share and 20% of NPV funds. Similarly, Interest APO has to be utilized as per 60% and 40% distribution of interest fund on activities mentioned in the CAF, Rules. In accordance with these provisions of the CAF Act and CAF Rules, the Annual Plan of Operation (APO) for the year 2023-24 has been divided into following schemes of operation:-

- Compensatory Afforestation (CA);
- Catchment Area Treatment Plans (CAT Plans);
- Integrated Wildlife Management Plan;
- Others;
- Net Present Value (NPV);
- Interest;

Further, the outlay of the APO has also been divided into the above given sectors and allotment of funds has been made under each individual sector within the total outlay of APO. The scheme-wise provision of funds made in the APO is in accordance with the priorities assigned to the above mentioned schemes of operation and also in consonance with the targets proposed under each sector.

Chapter-7

Scheme-wise Outlay

Annual Plan of Operation (APO) for the Financial Year 2023-24 has been formulated keeping in view the provisions of CAF Act, 2016 and guidelines laid down in CAF Rules, 2018 including permissible and non-permissible activities and outlay of Rs.237.22 crore is proposed and is placed before the Executive committee of National Authority for perusal and approval.

The details of scheme-wise provision of funds made in the APO for the FY 2023-24 amounting to the tune of Rs 237.22 crore are tabulated as under:-

Sr. No.	Name of Head/Sector	Amount (In Crores)
I	Site Specific Plans	
A	Compensatory Afforestation (CA)	25.00
B	Catchment Area Treatment Plans (CAT Plans)	24.00
C	Integrated Wildlife Management Plans	16.73
D	Others	1.03
	Total:	66.76
II	Non Site Specific Plans	
E	Net Present Value (NPV)	166.96
F	Interest	3.50
	Total	170.46
	Grand Total	237.22

The proposal of site specific plans of Rs. 66.76 crore are submitted in Part-2 of this APO and the non-site specific plans of Rs. 170.46 crore in Part-3.

PART-II
SITE-SPECIFIC PLANS/ACTIVITIES

Chapter-8

Site Specific Plans

The Compensatory Afforestation Act (CAF) 2016, under section 6(a), provides that the money received for compensatory afforestation, additional compensatory afforestation, penal compensatory afforestation, catchment area treatment plan and for any other site specific scheme may be used as per site specific schemes submitted by the State along with the approved proposals for diversion of forest land under the Forest (Conservation) Act 1980. As per the provisions of CAF Rules 2018, the proposals for undertaking the site-specific activities are to be submitted in this part of the APO.

Accordingly, under this part of the APO, the proposals for the implementation of following site-specific schemes are being submitted: -

1. COMPENSATORY AFFORESTATION (CA)
2. CATCHMENT AREA TREATMENT PLANS (CAT PLANS)
3. INTEGRATED WILDLIFE MANAGEMENT PLANS
4. OTHERS
 - (i) Soil Conservation Plan*
 - (ii) Green Belt Plan*

*(specific to Forest land diverted under FCA, 1980 for Establishment of Central University in Kangra District)

The details of scheme-wise proposals incorporated in the APO for the year 2023-24 are submitted in the following chapters on scheme-wise site specific plans.

Chapter-9

Compensatory Afforestation (CA)

The Compensatory Afforestation (CA) is one of the major activities undertaken by HP State CAMPA, which provides for raising of plantations in lieu of the forest areas diverted to the user agencies for non-forestry purposes under FCA, 1980. Under this sector Compensatory Afforestation/Additional Compensatory Afforestation/ Penal Compensatory Afforestation etc. are taken up, strictly as per the stipulations contained in Stage-I & II clearances of FCA diversion proposals granted by MoEF& CC, GoI.

The GoI guidelines provide for taking up all the compensatory afforestation in compact Land Banks which is being taken care by the HP State CAMPA. It also envisages identification of Land Banks, proper demarcation of the area selected for compensatory afforestation, implementation of soil and moisture conservation works as per site requirements, maintenance of previously raised plantations and raising of planting stock etc.

As on 31.12.2022, 2112.77 hectare is the balance area to be undertaken for compensatory afforestation and accordingly 1315.06 ha. has been proposed in the current APO for plantation.

A provision of **Rs. 25.00 crores** has been made under the scheme of Compensatory Afforestation of the APO for 2023-24 to achieve the proposed targets.

The details of activity-wise targets proposed under this sector are as under:-

Sr. No.	Name of Activity	Phy. Targets		Amount (Rs. in crores)
1	Plantation in Land Banks	1315.06	Ha.	8.03
2	Advance Works - Fencing of Land Banks & Nursery Raising Including Lantana Removal	52.30 Lac for Raising Plants & advance works 1286 ha.	Ha.	9.61
3	Maintenance of old CA Plantations	13899	Ha.	7.36
			Total:	25.00

Chapter-10

Catchment Area Treatment Plans (CAT PLANS)

The GoI guidelines provide that all the cases of diversion of forest land, in favour of Hydro-Electric Projects of the capacity of more than 10 MW and all medium and major irrigation projects should mandatorily be supported with proper Catchment Area Treatment Plan (CAT Plan). The final stage clearance, in favour of the User Agency, is granted by the MoEF&CC, GoI only after the receipt of approved CAT Plan document of the concerned hydro power project.

The outlay of a CAT Plan, as notified by the government of Himachal Pradesh at present, is determined at the rate of minimum 1.5% of the total project cost mentioned in the Techno Economic Clearance (TEC). The cost of CAT Plans, realized from the user agencies, is deposited in the account of Ad-hoc CAMPA, GoI.

The CAT Plan documents contain provisions for undertaking the activities of afforestation of the degraded forests, assisted natural regeneration, enrichment plantation, raising of medicinal plantation, plantation of non-timber forest produce and grasses, pasture development, maintenance of old plantations, development and maintenance of nurseries including raising of plants, soil and moisture conservation works, forest and rural infrastructure development and other ancillary works etc.

It is highlighted that the Catchment Area Treatment Plans (CAT Plans) is one of the major sectors/schemes of the Himachal Pradesh State CAMPA. Under the CAT Plans sector, in the APO of 2023-24, total 27 CAT Plans of different hydroelectric projects have been proposed for funding for their implementation and execution of works during the current financial year with an outlay of Rs. 24.00 crore to achieve the proposed targets.

The details of total targets proposed under main activities of all the CAT Plans are as under:-

Sr. No.	Name of Activity	Phy. Targets	Fin (in crore)	Remarks
1	New Plantations including Afforestation, Enrichment, Replenishment, ANR, NTFP, Med. Plantation and Pasture Dev. Removal of lantana	936 Ha.	4.26	Plantations=775.5Ha. Lantana Eradication=143Ha.
2	Maintenance of old Plantations	1497.5 Ha.	0.65	
3	Soil & Water Conservation Works including Soil and Moisture conservation works.	134335 No. Rmt	8.39	Brushwood, Live hdge, trenches, stabilization, Gully pugin=114968 Rmt. Bio Engineering measures

Sr. No.	Name of Activity	Phy. Targets		Fin (in crore)	Remarks
					(Raising & Planting)=8 Ha. WHS and Farm pond=97 No. C/dam/cwall/drsm dam=2622 Qum
4	Research, Training & Capacity Building	-	Ls	0.37	6
5	Infrastructure Dev.& Forest Protection	65	No. KM	2.74	Maint. Of Building 38 No. and R/o Paths 27
6	Wildlife Activities (water ponds etc.)	33	No.	1.12	
7	Other Works	2278	No.	3.84	
8	Nursery Raising/Infrastructure		Ha/ No.	2.63	21.65 Lac Plants & development of 8 no. Nursery
		Total:		24.00	

Chapter-11

Integrated Wildlife Management Plans

The diversion case of forest land, in favour of the user agency for establishing Parvati Stage-II Hydro-electric project in Kullu District, also include the Protected Area of Great Himalayan National Park, Shamshi, Kullu (HP) and also Kol Dam Hydro Project in Bilaspur, Solan Shimla and Suket Forest Divisions of Himachal Pradesh. Therefore, the GoI, while granting clearance under FCA, stipulated for the preparation of following Wildlife Management Plans at the cost of the User Agency:-

- a) Conservation of Flora & Fauna in and around GHNP, Shamshi.
- b) Conservation and Protection of Protected Area (against the stipulation of Koldam project)

The funds, against both the above-said plans, have been realized from the user agency and deposited in the account of Ad-hoc CAMPA, GoI. **A provision of Rs. 16.73 crore has been made under the Integrated Wildlife Management Plans in the APO 2023-24** as per detail given below:

a) Conservation of Flora & Fauna in and around GHNP, Shamshi

The plan of 'Conservation and Protection of Protected Areas' has been formulated with a total outlay of Rs. 17.615 crore making provision for In-situ efforts for the improvement and management of Protected Areas and forests which includes infrastructure, protection and communication; fire prevention, detection and control; catchment treatment, habitat restoration and management of rare and endangered species. It also highlights the community participation, mitigation of people wildlife conflict and capacity building etc.

The main activities of the plan of 'Conservation of Flora & Fauna in and around GHNP' are as under: -

- ✓ Improved management of Protected Areas and managed forests;
- ✓ Infrastructure, protection and communication;
- ✓ Fire prevention, detection and control – cutting & burning of fire-lines;
- ✓ Habitat improvement – soil and moisture conservation;
- ✓ Water development and harvesting;
- ✓ Community participation;
- ✓ Development of village institutions;
- ✓ Sustainable livelihood;
- ✓ Alternate income generating activities;
- ✓ Mitigation of people wildlife conflict;
- ✓ Communication and advocacy strategy;

- ✓ Development of human resource and infrastructure.

A financial provision of Rs. 1.15 crore has been made under the Wildlife Management Plan of 'Conservation of Flora and Fauna in & around GHNP' of the APO 2022-23 for the implementation and execution of works proposed under all the above mentioned activities.

a) Conservation and Protection of Protected Areas:

The wildlife management plan under Koldam Stipulation has been formulated with a total outlay of Rs. 226 crore making provision for the improvement and management of Protected Areas and Forests sprawling throughout the State. The major activities includes infrastructure, protection and communication; fire prevention and control; habitat restoration, research/study, management of rare and endangered species and capacity building of frontline staff.

A financial provision of Rs. 15.58 crore has been made under the Wildlife Management Plan of 'Conservation and Protection of Protected Areas against Koldam Stipulations' of the APO 2023-24 for the implementation and execution of works proposed under all the above mentioned activities.

Chapter-12

Other Site Specific Plans

Green Belt Plan and Soil Conservation Plan for Central University of Himachal Pradesh at Dehra in Kangra District

The GoI Stipulations, in some of the diversion cases of forest land for non-forestry purposes under Forest Conservation Act 1980 provide for the development of Green Belt and Soil Conservation Plan to be implemented at the cost of user agencies. The Green Belt and Soil Conservation Plans contain provision for removal of lantana, raising plantation, maintenance of plantations and soil & water conservation works etc. The funds realized from the User Agencies for the implementation of these plans have been deposited in the account of Ad-hoc CAMPA, GoI.

A provision of Rs. 1.03 Crore has been made under the scheme of Green Belt and Soil Conservation Plan in the APO 2023-24 for the implementation of these stipulations and to execute the proposed works.

The activities proposed under this scheme are detailed as under: -

i Green Belt Plan :

Sr. No.	Name of Component	Phy. Targets		Financial (In Lakhs)
1	Removal of Lantana	50	Ha.	16.05
Total				16.05

ii Soil Conservation Plan :

Sr. No.	Name of Component	Phy. Targets		Financial (In Lakhs)
1	Soil Conservation Works	20891	No. RMT	86.74
Total				86.74

Chapter-13

Proposed Allotment of Funds for Site Specific Plans

The details of sector-wise provision of funds made in the Part-2 of the APO for the implementation of site-specific schemes/ activities is given as under: -

Sr. No.	Name of Head/Sector	Amount (In Crores)
1	Compensatory Afforestation (CA)	25.00
2	Catchment Area Treatment Plans (CAT Plans)	24.00
3	Integrated Wildlife Management Plan	16.73
4	Others	
	4.1 Green Belt Plan	0.16
	4.2 Soil Conservation Plan	0.87
Grand Total:		66.76

Annexures

The scheme-wise detailed APOs for 2023-24 are annexed as under: -

1. Compensatory Afforestation (CA)

The Division-wise and Area-wise detailed APO of Compensatory Afforestation for 2023-24, amounting to Rs. 25.00 crore, is appended as **Annexure – 2A**.

2. Catchment Area Treatment Plans (CAT Plans)

The Division-wise, CAT Plan-wise and Area-wise detailed APO of CAT Plans for 2023-24, amounting to Rs. 26 crore, is appended as **Annexure – 2B**.

3. Integrated Wildlife Management Plans

The division-wise and area-wise detailed APO of Wildlife Management Plans of Conservation of Flora & Fauna in and around GHNP for 2023-24 and Protection Corpus Fund, amounting to Rs. 16.73 crores, is appended as **Annexure–2C**.

4. Others

1. Green Belt Plan

The Division-wise and Area-wise detailed APO of Green Belt for 2023-24, amounting to Rs. 0.16 crore, is appended as **Annexure – 2D**.

2. Soil Conservation Plan

The Division-wise and Area-wise detailed APO of Soil Conservation Plan for 2023-24, amounting to Rs. 0.87 crore, is appended as **Annexure – 2E**.

PART-III
NON-SITE SPECIFIC SCHEMES/ACTIVITIES

Chapter-14

CAF Act, 2016

The Compensatory Afforestation Act (CAF) 2016, under section 6(b), provides that the monies received towards the net present value and penal net present value shall be used for artificial regeneration (plantation), assisted natural regeneration, forest management, forest protection, forest and wildlife related infrastructure development, wildlife protection and management, supply of wood and other forest produce saving devices, and other allied activities in the manner as may be prescribed.

As per section 6(c) of CAF, Act 2016 the interest accrued on funds available in State Fund and interest accrued on all monies collected by State Government, which has been placed under the ad hoc Authority and deposited in the nationalized banks, in compliance of directions of the Supreme Court dated 5th may, 2006, shall be used for conservation and development of forest and wildlife in the manner as may be prescribed.

Section 6(f) provides for the non- recurring expenditure for the management of a State Authority including the salary and allowance payable to its officers and other employees may be met from a part of the interest accrued on the amount available in the State Fund, in the manner as may be prescribed.

CAF Rules, 2018

The CAF Rules 2018, notified by the Ministry of Environment, Forests & Climate Change, Government of India, under Rule 5(2), 5(3), 6(a) and 6(b) provide that: -

Rule 5(2): Eighty percent of the net present value (NPV) shall, in a financial year, be used for following permissible activities for the forest and wildlife management in the State, namely:

- a) Assisted Natural Regeneration.
- b) Artificial Regeneration (By Plantations).
- c) Silvicultural Operations in Forests.
- d) Protection of Plantations and Forests.
- e) Pest and Disease Control in Forests.
- f) Forest Fire Prevention and Control Operations.
- g) Soil and Moisture Conservation Works in the Forests.
- h) Improvement of Wildlife Habitat as Prescribed in the Approved Wildlife Management Plans/ Working Plans.
- i) Relocation of Villages from Protected Areas.
- j) Planting and Rejuvenation of Forest Cover on NFL falling in Wildlife Corridors.
- k) Establishment, Operation and Maintenance of Animal Rescue Centers, and Veterinary Treatment Facilities for Wild Animals.

l) Supply of Wood and Other Forest Produce Saving Devices as specified by the National Authority from time to time.

Rule 5(3): Twenty percent of the net present value (NPV) shall, in a financial year, be utilised for strengthening of the forest and wildlife related infrastructure, capacity building of the personnel involved in utilization of State fund namely:

- a) Establishment, up-gradation & maintenance of modern nurseries and other planting stock production facilities for production of quality planting materials.
- b) Purchase and maintenance of equipment or devices used for communication and information technology, for the purpose of protection of forests and wildlife.
- c) Construction, up-gradation and maintenance of inspection paths, forest roads in forest areas, fire lines, watch towers, check posts, timber depots.
- d) Construction of residential and official buildings in forests for frontline staffs deployed for protection of forests and wildlife.
- e) Engagement of local people or labours to assist regular staff of state Forest Department for protection of forests and wildlife undertaken from state fund.
- f) Survey and mapping of forest areas for compensatory afforestation works, soil and moisture conservation, catchment area treatment and wildlife management for preparing annual plans to be executed from the state fund.
- g) Independent concurrent monitoring and evaluation and including third party monitoring of works undertaken from state fund.
- h) Awareness for forestry and allied activities undertaken from the state fund.
- i) Distribution of planting stock for promotion of trees outside forests on government land promoted by State Govt.
- j) Forest certification and development of certification standard

Rule 6(a): not less than sixty percent of interest transferred to State Fund and further accrued on the amount available in the State Fund referred to in sub- rule (1) shall be spent on activities for the purpose of conservation and development of forest and wildlife namely: -

- i) To offset the incremental cost of compensatory afforestation, penal compensatory afforestation at the wage rates;
- ii) To offset the incremental cost of catchment area treatment plan at the increased rate of wages;
- iii) To offset the incremental cost of wildlife management plan at the increased wage rates;
- iv) For distribution of salary and allowance of members and staffs, both regular and contractual, of the State Authority;
- v) For distribution of sitting fees and allowances to nominated members of the State Authority;
- vi) Activities referred to in sub-rules (2) and (3) of rule 5;

Rule 6(b): not more than forty per cent of interest transferred to the State Fund and further accrued on the amount available in the State Fund shall be spent for the non- recurring and recurring expenditure of State Authority, namely: -

- i) Management of office establishment;
- ii) Office equipment including computers and peripherals and its maintenance for the State Authority;
- iii) Hiring of staff cars for the use of the officers and officials of the State authority;
- iv) Hiring of buildings on lease for the office establishment and residences of the officers of State Authority;
- v) Other contingences for the management of State Authority, with the approval of the steering committee of State Authority;
- vi) Any other activity for the management of the forest and wildlife not referred to in sub-rule (2) and (3) with the prior approval of the steering committee of the State authority and included in the annual plan of operation.

In accordance with the provisions of CAF Rules, the proposals for the implementation of non-site-specific scheme of Net Present Value (NPV) and Interest income of State Fund are submitted under the chapter 15 & chapter 16 of this document.

Sr. No.	Name of Activity	Outlay in crore	Remarks
	Activity under 80%		
1	Assisted Natural Regeneration	0.0	Rule-5(2)(a)
2	Artificial Regeneration	35.13	Rule-5(2)(b)
3	Nursery Raising	11.5	Rule-5(2)(b)
4	Silvicultural Operations in Forests	3.5	Rule-5(2)(c)
5	Protection of Plantations & Forests	14.66	Rule-5(2)(d)
6	Pest and Disease Control in Forests	1.64	Rule-5(2)(e)
7	Forest Fire Prevention and Control Operations	10	Rule-5(2)(f)
8	Soil and Moisture Conservation Works	49.89	Rule-5(2)(g)
9	Voluntary Relocation of Villages from Protected Areas	0	Rule-5(2)(h)
10	Improvement of Wildlife Habitat	0.18	Rule-5(2)(i)
11	Planting and Rejuvenation of Forest Cover on Non-Forest Land	0.0	Rule-5(2)(j)
12	Animal Rescue Centers and Veterinary Treatment Facilities for Wild Animals	1.12	Rule-5(2)(k)
13	Energy Saving Measures	0.9	Rule-5(2)(l)
14	Management of Biological Diversity and Resources	2.55	Rule-5(2)(m)
15	Treatment of degraded forest watersheds as per DPF prepared by using LiDAR Technology	2.5	Rule-5(2)(g)
	Total	133.57	

Activity under 20%			
16	Establishment, Upgradation and Maintenance of Modern Nurseries	6.75	<i>Rule-5(3)(a)</i>
17	Conservation, Suitable Use and Documentation of Biological Diversity	0.05	<i>Rule-5(3)(b)</i>
18	Information Technology and Communication	1.68	<i>Rule-5(3)(c)&(d)</i>
19	Forest Infrastructure Development	18.2	<i>Rule-5(3)(e)</i>
20	Survey and Mapping of Forest Areas	3.01	<i>Rule-5(3)(g)</i>
21	Monitoring and Evaluation	2	<i>Rule-5(3)(h)</i>
22	Publicity and Awareness Program/Capacity Building	0.8	<i>Rule-5(3)(i)</i>
23	Production and Distribution of Plants	0.4	<i>Rule-5(3)(j)</i>
24	Forest Certification and Development of Certification Standards	0.5	<i>Rule-5(3)(k)</i>
	Total	33.39	
	Grand Total	166.96	

Chapter-15

Non Site Specific Plan of Net Present Value (NPV)

The scheme/ sector of Net Present Value (NPV) constitutes as one of the major schemes of the HP State authority. The CAF Rules provide for utilizing the funds under NPV for undertaking the permissible activities prescribed separately for eighty percent (80%) share and twenty percent (20%) share. The detail of components incorporated in the NPV APO for 2023-24, in view of these provisions, for utilising 80% and 20% of NPV funds is given as under: -

- I. Components under 80% share of NPV Funds**
 1. Artificial Regeneration (By Plantations).
 2. Protection of Plantations and Forests.
 3. Subsidiary Silvicultural Operations.
 4. Soil and Moisture Conservation Works.
 5. Energy Saving Measures.
 6. Management of Biological diversity & Resources.

- II. Components under 20% share of NPV Funds**
 1. Forest Infrastructure Development (FID).
 2. Publicity and Awareness Programme/ Capacity Building.
 3. Survey & Mapping of Forest Areas for Preparing Plans.

The component-wise and activity-wise details of physical and financial targets proposed under the scheme of NPV in the APO for undertaking and executing during the current year are detailed here as under: -

I. COMPONENTS OF 80% SHARE OF NPV FUNDS

1. Artificial Regeneration

Artificial Regeneration (By Plantations)

Under the component of Artificial Regeneration (by Plantation), the plantation works are to be undertaken. The activities proposed for undertaking the plantation works under this component of the APO of current year are as under:-

- Planting in Lantana Cleared Areas.
- Replenishment and Enhancement of Forest Cover (REFC).

Planting in Lantana Cleared Areas:

The activity of “Rehabilitation of Forest Areas Infested with Invasive Alien Species” introduced for the forest areas infested with *Lantana*, provides for planting in those cleared areas which has

thin canopy density and requires rehabilitation by planting besides maintenance of forest areas taken up during previous years. The areas taken up for planting are provided maintenance for three successive years. In the APO of FY 2023-24, planting over 457.5 ha. has been proposed.

A provision of Rs. 3.44 crore has been made under the activity of Plantation in Lantana Cleared Areas of NPV scheme of the APO to meet the requirement of plantations and maintenance of old areas.

Replenishment and Enhancement of Forest Cover (REFC)

The activity of 'Replenishment and Enhancement of Forest Cover' has been introduced for funding under NPV; with a view to take up open forest areas for afforestation and to replenish the areas with thin canopy density. It also provides for taking up plantation in smaller patches for gap-filling in the forests.

Under this activity, 4532 hectare forest area has been proposed for undertaking plantations out of which 400 Ha. Plantations will be done through Eco Task Force (ETF). Also maintenance of old plantations over 2811 hectare areas is proposed.

In order to meet the target of afforestation 36.57 lakh plants will be raised in the nurseries and 11.50 Crore is proposed for this activity.

Under this activity, **a provision of Rs. 32.00 crore has been made** to meet the requirement of plantations and maintenance of old areas.

The activity-wise details of physical and financial targets proposed under the component of Artificial Regeneration (By Plantations) are tabulated as under:-

Sr. No	Name of Activity	Name of Work	Phy. Targets		Amount (Rs. in crore)
1	Planting in Lantana Cleared Areas	Plantations	457	Ha.	3.44
		Maint. of old plantations	1767	Ha.	0.65
Total:					4.09
2	Replenish. & Enhancement of Forest Cover (REFC)	Plantations	4532	Ha.	29.98
		Maint. of old plantations	1044	Ha.	1.05
Total:					31.03
4	Nursery	Raising of Plants in Nurseries	36.57 lakh Plants	No.	11.50
Total:					11.50
Total Artificial Regeneration					46.62

2. Subsidiary Silviculture Operations

The component and activity of Subsidiary Silviculture Operations has been introduced for undertaking silvicultural operations in the forest areas strictly as per the provisions contained in the working plan of the respective Forest Divisions for the activities like bush cutting, pruning, climber cutting, facilitating regeneration etc.. **A Provision of Rs. 3.50 crore has been proposed** in the APO of current year for undertaking the silvicultural operations in the forests.

The details of physical and financial targets proposed under this activity of the APO are as under:-

Sr. No.	Name of Activity	Phy. Targets		Amount (In Crore)
1	Subsidiary silvicultural operations	4747	Ha.	3.50
Total:				3.50

3. Protection of Plantations and Forests

For proper management and protection of forests in the State of Himachal Pradesh following activities have been proposed for undertaking during the current year under the component of Protection of Plantations and Forests of NPV scheme of the APO for 2023-24:-

- Construction of Boundary Pillars.
- Fencing of Forest Areas.
- Rehabilitation of Encroachment Cleared Areas.
- Strengthening of Forest Protection Network.
- Removal of Lantana by CRS Method

A financial provision of Rs. 14.66 crore has been made under the component of Protection of Plantations and Forests of the sector of NPV of APO 2023-24

Construction of Boundary Pillars

For proper management and identification of forest areas, the activity of Construction of Boundary Pillars has been proposed in the APO to construct and erect boundary pillars after proper demarcation of forest areas. **A provision of Rs. 3.00 crore has been made** under this activity in the APO of FY 2023-24.

Fencing of Forest Areas

With a view to provide protection to the forest areas prone to various biotic pressures, **an amount of Rs. 0.22 crore has been proposed** for providing fencing to the vulnerable forest areas during the current year.

Strengthening of Forest Protection Network

For better management and protection of forests and plantations, it becomes necessary to strengthen the Forest protection network. The activity of Strengthening of Forest Protection Network has been introduced in the APO so that the protection network can be strengthened.

There are many Forest divisions which are sharing borders with neighboring States of Punjab, Haryana and Jammu & Kashmir and require strict vigil over illicit felling/smuggling of forest produce in these sensitive divisions. Check posts has been established in the sensitive areas for the purpose. In the current APO strengthening of the check posts is proposed by way of modernization and up gradation, providing CCTV and wireless services etc. Further to strengthen the frontline staff patrolling vehicle will be provided in the areas sensitive for illicit felling and smuggling of forest produce. In this, year's APO a provision of Rs. 0.90 crore has been made for hiring of patrolling vehicles in sensitive border divisions. **A Provision of Rs. 3.50 crore has been made** in the APO of current year for strengthening the protection network.

Rehabilitation of Encroachment Cleared Areas

The State Forest Department has started a drive for the eviction of encroached forest areas in compliance to the orders of Hon'ble High Court of Himachal Pradesh. The activity of Rehabilitation of Encroachment Cleared Areas has been introduced with a view to rehabilitate the areas evicted from encroachers and to develop these forest areas as plantations and/ or natural forests. **An amount of Rs. 0.1 crore has been proposed** in the current APO for this activity.

Removal of Lantana by CRS Method:

In the state of Himachal Pradesh, large chunks in the forests falling in the Districts of Bilaspur, Hamirpur, Kangra, Sirmour, Solan & Una are infested with invasive alien species, particularly *Lantana*, up to the extent of 100% and whereas in the districts of Chamba, Mandi and Shimla, the areas are infested partly. To clear and rehabilitate forest areas infested with invasive alien species, Lantana in particular, to promote natural regeneration, to increase the availability of fodder and to rehabilitate such forest areas ecologically by promoting the growth of native species of herbs and shrubs; an activity – “Rehabilitation of Forest Areas Infested with Invasive Alien Species” has been introduced under this component. This activity provides for clearing of forest areas infested with *Lantana*, planting in those cleared areas which have thin canopy density and actually require rehabilitation by planting besides maintenance of forest areas taken up during previous years. From the year 2017-18 onwards, the planting of tall plants is being promoted and taken up in all lantana cleared areas fit for plantation for fast suppression of this weed and for quick rehabilitation. The areas taken up for clearing and planting are provided maintenance for three successive years. Upto 31.03.2022 total 49561 hectare lantana infested forest areas in the State have been taken up for their clearing under this scheme of NPV of State fund.

In the previous year (2022-23) APO provision of 1200 ha. Physical targets amounting to Rs 8.00 crore was made and the same was approved by the State Steering Committee to be placed before the National Authority (NA) for further approval but the National Authority deferred the proposed activity with condition to conduct the impact assessment study of Removal of Lantana. For the purpose a committee was constituted and committee has submitted the report which will be submitted separately.

Keeping in view the report of the Impact assessment study carried out in the Lantana cleared areas, for the year 2023-24, 1403 hectare lantana infested forest areas have been proposed for undertaking the work of clearing and 2976 ha will be taken for maintenance of lantana cleared areas and a provision of Rs. 5.76 Cr and Rs.2.06 Cr has been made in this APO respectively. In addition, planting over 457 hectare has been proposed in those forest areas which were undertaken for clearing during previous years and have thin canopy density and are fit for plantation. The proposals of plantations in lantana cleared areas are, however, being included and projected in the component of "Artificial regeneration (By Plantations)".

A financial provision of Rs. 14.66 crore has been made under the component of Protection of Plantations and Forests of the sector of NPV of APO 2023-24 to undertake the works of clearing of infested areas in the APO and to achieve the targets during the current year.

The details of activity-wise targets proposed under this component are as under:-

Sr. No.	Name of Activity	Phy. Targets		Amount (In crore)
i	Clearing of Infested Areas	1403	Ha.	5.76
ii	Maintenance of Cleared Areas	2976	Ha.	2.06
Total:			Ha	7.82

The activity-wise details of targets proposed under the component of Protection of Plantations and Forests of NPV scheme of the APO are as under:-

Sr. No.	Name of Activity	Phy. Targets		Amount (In crore)
1	Construction of Boundary Pillars	3763	No.	3.00
2	Fencing of Forest Areas	850	Rmt	0.22
3	Rehabilitation of Encroachment Cleared Areas	29.37	Ha.	0.1
4	Strengthening of Forest Protection Network	82	No.	3.50
5	Lantana removal by CRS method and maintenance	1403	Ha	7.83
Total:				14.65

4. Forest Fire Prevention and Control Operations

A lot of precious forest wealth is lost every year in the fire incidents in the forest areas which causes huge loss to the flora and fauna and also impacts the environment. The activity of Forest Fire Prevention and Control Operations has been introduced for undertaking measures for the prevention and control of fire incidents in the forest areas. Activities like control burning; deployment of fire watchers, maintenance of fire lines, purchase of forest fire fighting equipments, provision of mobility etc. shall be under taken. Also, a five year plan has been prepared for the activity for the State of Himachal Pradesh.

An Amount of Rs. 10.00 Crore has been proposed in the current APO for undertaking the forest fire prevention and control measures.

The details of physical and financial targets proposed under this activity of the APO are as under:-

Sr. No.	Name of Activity	Phy. Targets		Amount (In Crore)
1	Forest Fire Prevention and Control Operations		LS	10.00
			Total:	10.00

5. Soil & Moisture Conservation Works

Under the component of Soil & Moisture Conservation Works, attention is paid for undertaking the activities of soil and moisture conservation namely; rain water harvesting, development and maintenance of natural water sources, development of ponds/ water and snow harvesting structures, integrated development of catchments and soil conservation works.

Under the component of Soil and Moisture Conservation of NPV scheme of the APO, following activities have been introduced and incorporated for funding and undertaking the works during the financial year 2023-24: -

- Development and Maintenance of Roof Rain Water Harvesting Structures in Forest Buildings
- Development and Maintenance of Natural Springs in Forest Areas
- Development Ponds/Water and Snow Harvesting Structures.
- Soil Conservation Works.
- Development of degraded Forest Areas

Development of Ponds/Trenches/ Water Harvesting Structures

The activity of Development of Ponds/ Water and Snow Harvesting Structures has been incorporated for the conservation and preservation of water as also to increase moisture regime

in the forest areas. **An amount of Rs. 49.89 Crore has been proposed** in the APO for the development of ponds/ water and snow harvesting structures in the forest areas.

Soil Conservation Works

The activity of Soil Conservation Works has been incorporated under NPV scheme of the APO for the conservation and preservation of soil and also to control landslide, landslips and soil erosion in the forest areas. **A provision of Rs. 17.05 crore has been made** under the activity of soil conservation works to undertake the proposed works and achieve the targets during the financial year 2023-24.

The activity-wise details of targets proposed under the component of Soil and Moisture Conservation Works of NPV scheme of the APO are as under: -

Sr. No.	Name of Activity	Phy. Targets		Amount (In Crore)
1	Dev. and Maint. of RRWH Structures in Forest Buildings	36	No.	1.02
2	Dev. and Maint. of Natural Springs in Forest Areas	183	No.	3.00
3	Dev. of Ponds/ Water Harvesting Structures	43726	No. /Rmt	20.00
4	Soil Conservation Works	7315	No.	17.05
5	Development of Degraded Forest Areas (Barren land using plantation)	256	Ha.	8.82
		Total:		49.89

6. Energy Saving Measures

The component and activity of Energy Saving Measures has been incorporated under NPV scheme of the APO for providing alternate source of energy and to reduce pressure on the forests. **A provision of Rs. 0.90 crores has been made** under the activity of energy saving measures for undertaking the proposed works mainly purchasing of solar water heater and grid panels to achieve the targets during the current year.

7. Management of Biological Diversity and Resources

The population of monkeys in Himachal Pradesh has increased manifold. Consequently, the incidents of man-wildlife conflicts have also increased considerably. The monkeys have shifted from the forest areas to the nearby villages/towns and are causing heavy loss to the crops, vegetables, horticulture etc. besides attacking & biting the human beings in a number of cases.

With a view to control the monkey menace, the Government of Himachal Pradesh has introduced monkey sterilization programme in the State. This programme includes the activities of development & creation of Monkey Sterilization Centers and capturing & sterilizing of monkeys. To achieve the objectives of the monkey Sterilization program, the activity of Human Wildlife Conflict Management has been introduced under the component of bio-diversity management and protection of NPV scheme of the APO.

In addition to above, the activity of Wildlife Conservation and Protection has also been incorporated under this component of NPV scheme for undertaking the works of the conservation and protection of the wildlife.

To meet the financial requirement for implementing the above mentioned activities, **an amount of Rs. 2.55 Crores has been proposed in the APO for the execution of these activities during the current year.**

The activity-wise proposals under this component are as under: -

Sr. No.	Name of Activity	Phy. Targets		Amount (Rs. in Crore)
1	Management of Biological Diversity and Resources	3	No.	0.92
2	Human Wildlife Conflict Management	10000	No.	1.00
3	Wildlife Conservation and Protection	291		0.63
		Total:		2.55

8. Treatment of degraded forest watersheds as per DPR prepared by using LiDAR Technology

The Ministry of Environment Forest & Climate Change (MoEF & CC), Government of India has selected one pilot division in every State for preparation of a DPR for treatment of watershed area using LiDAR technology. Changar area of district Kangra (Dharamshala & Palampur Forest Divisions) has been selected in the State of Himachal Pradesh. **A provision of Rs. 2.50 crore has been kept for** under taking activities during current year as per DPR being prepared by using LiDAR technology.

II. COMPONENTS OF 20% SHARE OF NPV FUNDS

1. Forest Infrastructure Development (FID)

Following activities have been incorporated under the component of Forest Infrastructure Development of NPV scheme of the APO: -

- Residential and Office Buildings of Field Staff.
- Construction, Upgradation and Maintenance of Forest Road, Paths, Fire Lines, Watch Towers, Check Posts, Timber Depots.

Residential and Office Buildings of Field Staff

The Forest Guards, Deputy Rangers and Forest Rangers of Himachal Pradesh Forest Department play active role in conservation and protection of forests; raising and maintenance of plantations and also perform the duties of protection of forests. They need proper housing to reside while shouldering their responsibilities day and night.

Therefore, the HP State Authority has proposed funds for the construction of new office and residential buildings for these categories of field staff and also to develop and maintain their buildings to make them living worthy for which funds are not available in the regular budgetary schemes of the state Forest Department. The activity of residential and office buildings of field staff has been introduced to provide better office and residential buildings to the frontline field staff of the State Forest Department involved in the conservation and protection of forests and wildlife.

A provision of Rs. 10.20 Crores has been made under this activity of NPV scheme of the APO for the current year.

Construction, Upgradation and Maintenance of Forest Road, Paths, Fire Lines, Watch Towers, Check Posts, Timber Depots

The Forest Road, Paths, Fire Lines, Watch Towers, and Check Posts act as life lines for the management and protection of forests and wildlife. These assets need regular up gradation and maintenance. This activity under NPV scheme of the APO has, therefore, been introduced to provide funds for the construction, up gradation and maintenance of forest roads, inspection paths, fire lines, watch towers and check posts etc.

An amount of Rs. 8.00 Crores has been proposed in the APO of current year for undertaking this activity during the current year.

The activity-wise details of physical and financial targets proposed under the component of Forest Infrastructure Development are tabulated as under:-

Sr. No.	Name of Activity	Phy. Targets		Amount (In Crore)
1	Residential and Office Buildings of Field Staff	65	No.	10.20
2	Construction, Upgradation and Maintenance of Forest Road, Paths, Fire Lines, Watch Towers, Check Posts	267	No	8.00
Total:				18.2

2. Establishment, Upgradation and Maintenance of Modern Nurseries

One model nursery will be developed in the FY 2023-24 in each of the Forest Divisions of the HPFD, 45 in total (T & WL). Facilities like vermi compost units, poly houses, green houses, sprinklers, root trainers and tissue culture labs etc. shall be developed. The existing infrastructure will be further strengthened.

A provision of Rs. 6.75 Crores has been made for developing the modern nurseries with advance techniques with the help of HRFI Panthaghati under this activity of NPV scheme for the up gradation of existing Nurseries.

3. Publicity and Awareness Programme/ Capacity Building

The component of Publicity & Awareness/ Capacity Building has been incorporated under the NPV scheme of APO for creating awareness of forestry and allied activities among masses and also to give vast publicity to forestry schemes and programmes being implemented in the State.

Under Capacity building training of frontline staff of State department on various forestry issues like fire management, wildlife conservation and issues, IT/GPS handling, legal issues in forestry and human resources development etc. are included for efficient discharge of duty in protection and conservation of forest by frontline staff.

Therefore, the HP State Authority has also proposed funds in the current year APO for the Forest Training Institutes to conduct trainings for frontline staff of State Forest department.

A provision of Rs. 0.8 Crores has been made under this activity of NPV scheme of the APO for the current year.

4. Survey and Mapping of Forest Areas for Preparing Plans

The component and activity of Survey & Mapping of Forest Areas for Preparing Plans has been incorporated under the NPV scheme of APO for undertaking proper survey and mapping of forest areas for preparing annual plan of operations.

A provision of Rs 3.0 Crores has been made under this activity of NPV scheme of the APO for undertaking the works of survey and mapping of forest areas and to prepare base line data and tracking the changes taking place in the forest resources through IT enabled services and for purchase of Drone and other IT equipment's.

III. Total Outlay of NPV Scheme

A total provision of Rs. 166.96 crore has been made under NPV scheme of the APO for 2023-24 taking all the above mentioned components and activities altogether.

The component-wise detail of outlay under NPV scheme of the APO is tabulated as under:-

Sr. No.	Name of Activity	Outlay in Crore	Remarks
	Activity under 80%		
1	Assisted Natural Regeneration		Rule-5(2)(a)
2	Artificial Regeneration	35.13	Rule-5(2)(b)
3	Nursery Raising	11.5	Rule-5(2)(b)
4	Silvicultural Operations in Forests	3.5	Rule-5(2)(c)
5	Protection of Plantations & Forests	14.66	Rule-5(2)(d)
6	Pest and Disease Control in Forests	1.64	Rule-5(2)(e)
7	Forest Fire Prevention and Control Operations	10	Rule-5(2)(f)
8	Soil and Moisture Conservation Works	49.89	Rule-5(2)(g)
9	Voluntary Relocation of Villages from Protected Areas	0	Rule-5(2)(h)
10	Improvement of Wildlife Habitat	0.18	Rule-5(2)(i)
11	Planting and Rejuvenation of Forest Cover on Non-Forest Land	0.00	Rule-5(2)(j)
12	Animal Rescue Centers and Veterinary Treatment Facilities for Wild Animals	1.12	Rule-5(2)(k)
13	Energy Saving Measures	0.9	Rule-5(2)(l)
14	Management of Biological Diversity and Resources	2.55	Rule-5(2)(m)
15	Treatment of degraded forest watersheds as per DPF prepared by using LiDAR Technology	2.5	Rule-5(2)(g)
	Total	133.57	
	Activity under 20%		
16	Establishment, Upgradation and Maintenance of Modern Nurseries	6.75	Rule-5(3)(a)
17	Conservation, Suitable Use and Documentation of Biological Diversity	0.05	Rule-5(3)(b)
18	Information Technology and Communication	1.68	Rule-5(3)(c)&(d)
19	Forest Infrastructure Development	18.2	Rule-5(3)(e)
20	Survey and Mapping of Forest Areas	3.01	Rule-5(3)(g)
21	Monitoring and Evaluation	2	Rule-5(3)(h)
22	Publicity and Awareness Program/Capacity Building	0.8	Rule-5(3)(i)
23	Production and Distribution of Plants	0.4	Rule-5(3)(j)
24	Forest Certification and Development of Certification Standards	0.5	Rule-5(3)(k)
	Total	33.39	
	Grand Total	166.96	

The division-wise and area-wise detailed APO under NPV scheme of the APO for the year 2023-24 is appended as Annexure -2E.

**

Chapter- 16

Non Site Specific Plan of Interest part of State Fund

The CAF Rules provide for utilizing the interest accrued on State Fund for undertaking the permissible activities prescribed separately for sixty percent (60%) share and forty percent (40%) share of interest. The detail of components incorporated in the Interest APO for 2023-24, in view of these provisions, for utilizing 60% and 40% of interest fund is given as under: -

I. Components under 60% share of Interest Funds

1. Salary and allowances for State Authority regular and contractual staff
2. Sitting fees and allowances to nominated members of the State Authority

II. Components under 40% share of Interest Funds

1. Management of office establishment, office equipment including computers and peripherals and its maintenance
2. Hiring of Staff vehicle for use of officers and officials of State Authority
3. Hiring of office building of State Authority on lease

III. Total Outlay of Interest Fund

A total provision of Rs. Rs. 3.50 crore has been made under interest income of State Fund for the APO for 2023-24 taking all the above mentioned components and activities altogether.

The component-wise detail of outlay under Interest of the APO is tabulated as under: -

Sr. No.	Name of Activity	Amount	Remarks
1	Activity under 60%		
1	for disbursement of salary and allowances of members and staffs, other regular and contractual, of the State Authority;	20000000	Rule 6 (a) (iv)
2	for disbursement of sitting fees and allowances to nominated members of State Authority;	1000000	Rule 6 (a) (v)
	Total	21000000	
2	Activity under 40%		
1	management of office establishment;	2900000	Rule 6 (b)(i)
2	hiring of staff cars for the use of the officers and officials of the State Authority;	4500000	Rule 6 (b)(iii)
3	hiring of buildings on lease for the office establishment and residences of the officers of the State Authority;	3600000	Rule 6 (b)(iv)
4	office equipment including computers and peripherals and its maintenance for the State authority;	3000000	Rule 6 (b)(ii)
	Total	14000000	
	G. Total	35000000	

The component-wise detailed APO under interest of the State Fund for the year 2023-24 is appended as Annexure – 2F.

PART-IV

Measurable output of Physical Activities

Chapter-17

Physical and Financial Targets of Activities

The Annual Plan of Operations for the year 2023-24 consists of Plantation, Wildlife Management, Forest Protection and Conservation, Soil Conservation works and Nursery raising along with infrastructure development and other ancillary works as per rules of CAF, 2018.

Plantation: Plantation is carried out under Compensatory Afforestation, Catchment Treatment Plan and Net Present Value sectors. Total 7074 ha of new plantation are proposed to be raised during 2023-24 to increase forest cover and to achieve committed Sustainable Development Goals of the State in time bound manner.

The sector wise breakup is as under:

Sr. No	Name of Sector	Area (ha.)
1.	Plantation under Compensatory Afforestation Schemes	1315
2.	Plantation under Catchment Area Treatment Plans	775
3.	Plantation under Net Present Value	4984
	Total	7074

Soil & Moisture Conservation Works: Major emphasis is on water harvesting, enhancing soil moisture, recharge ground water, and prevent loss of fertile top soil through run off by carrying out various soil and water conservation activities. Under this activity total provision of Rs. 49.89 crore has been made in the proposed NPV and Rs. 8.38 crore in Catchment Treatment Plan for the year 2023-24.

The Ministry of Environment Forest & Climate Change (MoEF & CC), Government of India has selected one pilot division in every State for preparation of a DPR for treatment of watershed area using LiDAR technology. A provision of Rs. 2.50crore has been kept for under taking activities during current year as per DPR being prepared by using LiDAR technology.

Management of Biological Diversity and Resources: Provision of Rs. 2.55crore has been made to capture/transportation of monkeys to carry out sterilisation to contain population explosion of simians to combat monkey menace in the State.

Nursery: Total 56.85 lakh seedlings will be raised/planted during the year. Under CA 14.47 lac seedlings, under CAT Plan 5.81 lac seedling, and under NPV sector 36.57 lac seedling will be raised. Out 56.85 lakh seedlings 4.36 seedlings will be raised as tall plants.

Removal of Lantana from Forests: Large chunks of forests in the State are infested with invasive alien species particularly lantana. The HP State Authority has taken up the scheme to clear and rehabilitate the lantana infested areas to increase the availability of fodder and eco rehabilitation of such forest areas by promoting the growth of native species of herbs, shrubs and trees. Total 1402 hectare lantana infested areas have been proposed for clearing /eradication and 475 ha of area where lantana was removed in previous years will be planted with tall plants, to rehabilitate the area and contain the spread of the weed under NPV sector.

The Physical and financial targets of each activity to be undertaken in measurable quantity along with the estimated cost provided in part II & part III is tabulated as under:-

Sr. No	Name of Activity	Targets		Financial (Cr)
		Phy	Unit	
1	Plantations	7074	Ha	62.8
2	Soil Conservation works	153552	No.	25.4
3	Removal of Lantatna from forest	1403	Ha	5.76
4	Treatment of degraded watershed (LiDAR Survey)	LS	Ha	2.50
5	Management of Biological Diversity and Resources	10000	No.	1.00
6	Development of Modern Nurseries	65	No.	6.75

Chapter-18

Measurable output of Physical activities

The activities mentioned in the proposed APO will be done during the financial year 2023-24 as per the schedule prescribed under the Calendar of Activities specific to every Forest Circle in the State. However, implementation of works may be influenced by abiotic and biotic factors like; microclimate, availability of casual labour, procedural delay and other field conditions.

The measurable output of all physical activities to be undertaken along with the period required for achieving the measurable output is tabulated as below:

Sr. No	Name of Activity	Measurable Output	Unit (Ha/No)	Period required to achieve measurable output	Remarks
1	Plantations	7074	Ha	One Financial Year	Monsoon and Winter Season Plantation
2	Soil Conservation works	153552	Number	One Financial Year	Year long activity
3	Removal of Lantana from forest	1403	Ha	One Financial Year	Year long activity
4	Management of Biological Diversity and Resources	10000	Number	One Financial Year	Year long activity
5	Development of Modern Nurseries	45	Number s	One to Two Financial Year	Year long activity

Chapter-19

Third Party Monitoring and Evaluation Report

The Himachal Pradesh Forest department has put into practice a revamped and effective Monitoring and Evaluation system in place for monitoring of all important activities of the department. A three tier monitoring and evaluation structure has been devised by the department as below: -

First-tier monitoring involves in-house checking of forests and to review the completeness and quality of various forestry works by all levels of field officers. Norms for Mandatory Field Inspection as well as touring have been fixed.

Second-tier monitoring involves independent monitoring of all types of departmental works selected through random sampling by M&E Wing of the department, headed by an officer of the rank of CCF. Senior Forest Officers forming part of the Forest Headquarters located at Shimla and outside Shimla are also involved in the second-tier monitoring and evaluation of field works in order to use their experience in improving the implementation of field works.

The Third-tier monitoring involves independent monitoring of all departmental works by independent monitors from outside the organization.

The assignment of monitoring and evaluation of the plantations conducted by Himachal Pradesh Forest Department during the years 2016-17, 2017-18 and 2018-19 under various schemes i.e. Catchment Area Treatment Plan, Compensatory Afforestation and Soil & Water Conservation in 35 Forest Divisions and 05 Wildlife Divisions was carried out by Himalayan Forest Research Institute as per standard methodology. The primary objective of this assignment was to provide information of H.P. State CAMPA on the quality and impact of plantations done under various scheme of CAMPA. Himachal Pradesh Forest Department may utilize the output of monitoring & evaluation to evaluate the success and impact of the plantations done under CAMPA so far. The suggestions given in the state level as well as in division wise reports may also improve upon the activity and methodology to be adopted in future under CAMPA plantations. The main report of monitoring & evaluation contained the comprehensive information on state level having division wise summary. The forest division wise detail report of monitoring & evaluation was prepared separately for 35 Forest Divisions as 39 volumes and 04 Wildlife Divisions as 12 volumes.

In the state of Himachal Pradesh, total plantation area during 2016-17 under various schemes i.e. Compensatory Afforestation, CAT PLAN, NPV plantation and Soil & Water Conservation was

1208.49 ha, 1182.0 ha, 1102.0 ha and 09 ha, respectively. Whereas, during 2017-18 area under various schemes was 1390.0 ha, 845.0 ha, 1005.0 ha, respectively. During the year, 2018-19 area under various schemes was 581.0 ha, 562.0 ha and 1338.0 ha, respectively. Under **Compensatory Afforestation**, area evaluated during 2016-17 and 2017-18 and 2018-19 was 775.19 ha, 745.44 ha and 466.80 ha, respectively. Whereas, under **CAT PLAN** area evaluated during 2016-17, 2017-18 and 2018-19 was 461 ha, 322.63 ha and 207.17 ha, respectively. Similarly, under **NPV** plantation area evaluated was 652 ha, 425.6 ha and 746.5 ha for these years, respectively. Under **Soil & Water Conservation** scheme the plantation area evaluated during 2016-17 was 09 ha (**Table-1**).

Table-1: Total Area (ha) Evaluated under Various Schemes in the State of Himachal Pradesh

Schemes	2016-17			2017-18			2018-19		
	Total Area (ha)	Area taken for evaluation (ha)	Percentage of area covered in evaluation	Total Area (ha)	Area taken for evaluation (ha)	Percentage of area covered in evaluation	Total Area (ha)	Area taken for evaluation (ha)	Percentage of area covered in evaluation
Compensatory Afforestation	1208.49	775.19	64.14%	1390	745.44	53.62%	581.0	466.80	80.34%
CAT PLAN	1182	461	39.0%	845	322.63	38.18%	562	207.17	36.86%
Net Present Value	1102	652	59.16%	1005	425.6	42.34%	1338	746.5	55.75%
Soil & Water Conservation	09	09	100%	-	-	-	-	-	-
Total	3501.49	1897.19	54.18%	3240	1493.67	46.10%	2481	1420.47	57.25%

Total number of plantation sites for the entire state during 2016-17 which were evaluated under various schemes i.e. Compensatory Afforestation, CAT PLAN, NPV plantation and Soil & Water Conservation was 103, 169, 82 and 02, respectively. Whereas, during 2017-18 total number of sites under various schemes i.e. Compensatory Afforestation, CAT PLAN and NPV was 112, 142 and 44, respectively. Similarly, during 2018-19 which was evaluated under the scheme Compensatory Afforestation, CAT PLAN, NPV was 59, 92 and 119, respectively. Under **Compensatory Afforestation**, number of plantation sites evaluated during 2016-17, 2017-18 and 2018-19 was 71, 68 and 59, respectively. Whereas, under **CAT PLAN**, number of plantation sites evaluated during 2016-17, 2017-18 and 2018-19 was 70, 60 and 39, respectively. Similarly, under **NPV** plantations numbers of plantation sites evaluated during 2016-17, 2017-18 and 2018-19 was 48, 28 and 76, respectively. Under **Soil & Water Conservation** scheme, the number of plantation sites evaluated during 2016-17 was 02 (**Table-2**).

Table-2: Number of Sites Evaluated under Various Schemes in the State of Himachal Pradesh

Scheme	2016-17			2017-18			2018-19		
	Total Sites	Number of Sites taken for evaluation	Percentage of Sites covered in evaluation	Total Sites	Number of Sites taken for evaluation	Percentage of Sites covered in evaluation	Total Sites	Number of Sites taken for evaluation	Percentage of Sites covered in evaluation
CA	103	71	68.93%	112	68	60.71%	59	48	81.35%
CAT PLAN	169	70	41.42%	142	60	42.25%	92	39	42.39%
NPV	82	48	58.53%	44	28	63.63%	119	76	63.86%
S&WC	02	02	100%	-	-	-	-	-	-
Total	356	191	53.65%	298	156	52.34%	270	163	60.37%

Stratified Multi-stage Random Sampling Methodology was used to carry out the studies separately year wise for plantations raised under Compensatory Afforestation, CAT Plan, NPV plantations and Soil & Water Conservation Plantations. The plantation sites were selected randomly by using simple random sampling with the help of Computer generating random table number and all the forest blocks were covered where plantations have been done. Sampling intensity of minimum 30% of plantation sites by number and 25% by total area of plantations of a particular year was adopted. However, during 2016-17 per cent of sites evaluated under the scheme CA, CAT PLAN, NPV and S&WC was 68.93%, 41.42%, 58.53% and 100%, respectively. Whereas, during 2017-18 per cent of sites evaluated under the scheme CA, CAT PLAN and NPV was 60.71%, 42.25% and 63.63%, respectively. Similarly, during 2018-19 per cent of sites evaluated under the scheme CA, CAT PLAN and NPV was 81.35%, 42.39% and 63.86%, respectively. On the basis of area during 2016-17 area evaluated under various schemes i.e. CA, CAT PLAN, NPV and S&WC was 64.14%, 39.0%, 59.16% and 100% respectively. Whereas, during 2017-18 area evaluated under various schemes i.e. CA, CAT PLAN and NPV was 53.62%, 38.18%, and 42.348%, respectively. Similarly, during 2018-19 area evaluated under various schemes i.e. CA, CAT PLAN and NPV was 80.34%, 36.86%, and 55.75%, respectively.

In 5% of the plantations raised in various schemes, 100% physical verification with respect to number of plants planted and survival was also done. During 2016-17 total 58 sites under various schemes having area of 452.896 ha, during 2017-18 total 42 sites having area of 263.12 ha and during 2018-19 total 48 sites having area of 373.158 were evaluated through 100% physical verification (**Table-3**).

Table-3: Area Covered for 100% for Physical verification and Survival Percentage

Scheme	Total Sites	Total Area (ha)	Number of sites taken for 100% verification	Area of sites taken for 100% verification (ha)	Average Survival Per cent in sites taken for 100% Verification	Average Survival Per cent in sites Evaluated by

						Sampling
2016-17						
CA	103	1208.49	22	216.896	32.7	46.06
CAT PLAN	169	1182	21	146	37.47	30.2
NPV	82	1102	14	85	37.88	36.41
S&WC	02	09	1	5	41.18	23.16
Total	356	3501.49	58	452.896	--	--
2017-18						
CA	112	1390.0	18	111.12	40.07	45.19
CAT PLAN	142	845	15	81	39.41	33.75
NPV	44	1005	09	71	38.33	32.92
Total	298	3240.0	42	263.12	--	--
2018-19						
CA	59	581	18	184.158	44.11	43.27
CAT PLAN	92	562	14	57	45.67	30.51
NPV	119	1338	16	132	35.11	45.68
Total	270	2481	48	373.158	--	--

The sample plots of size 0.1 ha were laid out in the selected plantation site. Within the enumeration site, girth/ diameter (at breast/ collar height) were measured for all the plants. The sample plant within each girth/ diameter class was measured for height subject to a minimum of 10 plants under each species. GPS Coordinates of the study sites/ locations was also recorded for authentication of the study. The data collected from the field was statistically analyzed for descriptive statistics and other parameters by following standard methodology. Based on the plot data, plant growth (average height & diameter) and survival percentage was estimated for the plantations.

As per the ToR, selected plantation areas were examined for area accuracy with the help of GPS by way of traversing around the boundary of the plantations. The shape files of the sample plantations were also prepared for geo-reference parameters. The condition and quality of fencing erected for the plantation was assessed with respect to type of fence posts used and number of stands of the fencing etc.

Suitability of species selected for plantation viz-a-viz area selected for plantation and objectives of the plantation scheme was also assessed on the basis of documents supplied and visiting the plantation sites. The condition and quality of fencing erected for the plantation was assessed with respect to type of fence posts used and number of strands of the fencing etc. The views of the people living in the vicinity of the plantation were taken through personal interview in open ended pre-structured questionnaires in order to assess the impact of plantations on their quality of life and livelihoods. The survival percentage of plants in all the Forest Divisions as well as for the entire State was classified into following categories:

S. No.	Category	Survival Per cent
1.	Below Average	0-30

2.	Average	31-50
3.	Good	51-70
4.	Very Good	71-100

Weighted average survival percentage was also calculated for all the Forest Divisions and has been described for lower zone, higher zone and cumulatively for the entire State for every component of plantations for each year.

Survival and Growth Performance:

A). Lower Altitude Areas:

In the lower altitude areas i.e. Forest Divisions of Bilaspur, Hamirpur, Nahan and Solan Forest Circles, under the **Compensatory Afforestation (CA)** plantations raised during 2016-17, survival in 20.0%, 60.0% and 20.0% plantation sites was good, average and below average respectively. During the year 2017-18, survival in 5.26%, 47.37%, 10.53% and 36.84% plantation sites was very good, good, average and below average respectively. During 2018-19, survival in 66.67% and 33.33% plantation sites was average and below average, respectively. Under the **Catchment Area Treatment Plan (CAT Plan)** plantations raised during the year 2016-17, survival in 100% plantation sites was average. During the year 2017-18, survival in 11.11%, 66.67% and 22.22% plantation sites was good, average and below average, respectively. During 2018-19, survival in 100% plantation sites was average.

Under the **NPV** plantations raised during the year 2016-17, survival in 22.22%, 22.22% and 55.56% plantation sites was good, average and below average, respectively. During the year 2017-18, survival in 14.29, 14.29%, 42.86% and 28.57% plantation sites was very good, good, average and below average, respectively. During 2018-19, survival in 28.57% and 71.43% plantation sites was good and below average, respectively. Under the **Soil & Water Conservation (S & WC)** plantations raised during the year 2016-17, survival in one plantation site was below average. The above details are being given in the following (**Table-4**).

Table-4: Details of Number of Sampled Sites under different survival categories in various schemes in Lower Altitude Areas of Himachal Pradesh

PERCENTAGE OF SITES UNDER DIFFERENT SURVIVAL CATEGORY									
Year of Plantation	Total Sites Sampled	0-30%		31-50%		51-70%		71-100%	
		(Below Average)		(Average)		(Good)		(Very Good)	
		Number	Per cent of total sites	Number	Per cent of total sites	Number	Per cent of total sites	Number	Per cent of total sites
A). Compensatory Afforestation									
2016-17	5	1	20.00%	3	60.00%	1	20.00%	-	NA
2017-18	19	7	36.84%	2	10.53%	9	47.37%	1	5.26%
2018-19	3	1	33.33%	2	66.67%	-		-	NA
B). CAT PLAN									

2016-17	1	-	-	1	100%	-	-	-	NA
2017-18	9	2	22.22%	6	66.67%	1	11.11%	-	NA
2018-19	1	-	-	1	100%	-	-	-	NA
C]. NPV									
2016-17	9	5	55.56%	2	22.22%	2	22.22%		NA
2017-18	7	2	28.57%	3	42.86%	1	14.29%	1	14.29%
2018-19	7	5	71.43%	-	-	2	28.57%	-	NA
D]. S&WC									
2016-17	1	1	100%	-	NA	-	NA	-	NA

In the lower altitude areas, under **Compensatory Afforestation** plantations, weighted average survival per cent during the year 2016-17, 2017-18 and 2018-19 was 47.66%, 42.02% and 40.96%, respectively. Whereas, under **CAT PLAN**, weighted average survival per cent for the year 2016-17, 2017-18 and 2018-19 was 36.06%, 36.54% and 34.46%, respectively. In plantations raised during 2016-17, 2017-18 and 2018-19 under **NPV** the weighted average survival per cent was 25.29%, 41.51% and 34.76%, respectively. Whereas, under the scheme **S&WC**, during the period 2016-17 the weighted average survival per cent was 33.17% (**Table-5**).

Table-5: Weighted average survival in sampled locations under various schemes in Lower Altitude Area

Sl. No.	Name of Scheme	Weighted Average Survival (%)		
		2016-17	2017-18	2018-19
1.	Compensatory Afforestation	47.66	42.02	40.96
2.	CAT PLAN	36.06	36.54	34.46
3.	NPV	25.29	41.51	34.76
4.	Soil & Water Conservation	33.17	NA	NA

Plant Species Performed Better in Plantation Sites:

The growth performance of the species viz., *Acacia auriculiformis*, *Acacia catechu*, *Acacia nilotica*, *Aegle marmelos*, *Albizia lebbeck*, *Azadirachta indica*, *Bauhinia variegata*, *Bombax cieba*, *Cassia fistula*, *Cedrella toona*, *Dalbergia sissoo*, *Dendrocalamus strictus*, *Dolonix regia*, *Ficus religiosa*, *Grevillea robusta*, *Grewia optiva*, *Holoptelea integrifolia*, *Lannia grandis*, *Leucaena leucocephala*, *Mangifera indica*, *Melia azadarach*, *Morus alba*, *Olea paniculata*, *Phyllanthus emblica*, *Pinus roxburghii*, *Punica granatum*, *Pyrus pashia*, *Sapindus mukorossi*, *Syzygium cumunii*, *Tectona grandis*, *Terminalia arjuna*, *Terminalia bellerica*, *Terminalia*

chebula, Terminalia tomentosa, Tinospora cordifolia, Toona ciliata, Vitex negundu and Ziziphus mauritiana was better in most of the plantation sites.

Plant Species Not Performed Well in Plantation Sites:

The plant species viz., Acacia mollissima, Olea glandulifera, Pinus roxburghii, Prunus cerasoides, Punica granatum, Syzygium cumunii, Tamarindus indica and Terminalia bellericadid not respond well in some of the plantation sites.

Reasons for Low Plant Survival Per cent:

The low survival percentage in some of the sites was due to damage caused by fire, wild animals, monkeys, grazing and invasion of *Lantana camara* and other shrub species. In some of the sites, survival percentage and growth performance of the plantation skewed because terrain and topography of the sites was not favourable for the growth of planted species.

In the higher altitude areas i.e. Forest Divisions of Chamba, Dharamshala, Kullu, Mandi, Rampur, Shimla, Wildlife Shimla (S), Wildlife Dharamshala (N) Circles and GHNP Shamshi under the **Compensatory Afforestation (CA)** plantations raised during the year 2016-17, survival in 16.22%, 10.81%, 43.24% and 29.73% plantations was very good, good, average and below average, respectively. During the year 2017-18, survival in 15.15%, 21.22%, 48.48% and 15.15% plantation sites was very good, good, average and below average, respectively. During the year 2018-19, survival in 06.90%, 31.03%, 48.28% and 13.79% plantation sites was very good, good, average and below average, respectively.

Under the **Catchment Area Treatment Plan (CAT Plan)** plantations raised during the year 2016-17, survival in 10.87%, 47.83%, and 41.30% plantation sites was good, average and below average, respectively. During the year 2017-18, survival in 18.75%, 37.50% and 43.75% plantation sites was good, average and below average, respectively. During the year 2018-19, survival in 13.04%, 47.83% and 39.13% plantation sites was good, average and below average, respectively.

Under the **NPV** plantations raised during the year 2016-17, survival in 08.33%, 16.67%, 50.0% and 25.0% plantation sites was very good, good, average and below average, respectively. During the year 2017-18, survival in 7.14%, 42.86% and 50.0% plantation sites was good, average and below average, respectively. During the year 2018-19, survival in 12.07%, 37.93%, 37.93% and 12.07% plantation sites was very good, good, average and below average, respectively. The above details are being given in the **Table-6**.

Table-6: Details of number of sampled sites under different survival categories in various schemes in Higher Altitude Areas of Himachal Pradesh

PERCENTAGE OF SITES UNDER DIFFERENT SURVIVAL CATEGORY									
Year of Plantation	Total Sites Sampled	0-30% (Below Average)		31-50% (Average)		51-70% (Good)		71-100% (Very Good)	
		Number	Per cent of total sites	Number	Per cent of total sites	Number	Per cent of total sites	Number	Per cent of total sites
A]. Compensatory Afforestation									
2016-17	37	11	29.73%	16	43.24%	4	10.81%	6	16.22%
2017-18	33	5	15.15%	16	48.48%	7	21.22%	5	15.15%
2018-19	29	4	13.79%	14	48.28%	9	31.03%	2	06.90%
B]. CAT PLAN									
2016-17	46	19	41.30%	22	47.83%	5	10.87%	NA	NA
2017-18	32	14	43.75%	12	37.50%	6	18.75%	NA	NA
2018-19	23	9	39.13%	11	47.83%	3	13.04%	NA	NA
C]. NPV									
2016-17	24	6	25.0%	12	50.0%	4	16.67%	2	8.33%
2017-18	14	7	50.0%	6	42.86%	1	07.14%	NA	NA
2018-19	58	7	12.07%	22	37.93%	22	37.93%	7	12.07%

B]. Higher Altitude Areas:

In the higher altitude areas, under **Compensatory Afforestation** plantations, weighted average survival per cent during the year 2016-17, 2017-18 and 2018-19 was 35.63%, 46.33% and 43.03%, respectively. Whereas, under **CAT PLAN**, weighted average survival per cent for the year 2016-17, 2017-18 and 2018-19 was 32.75%, 34.23% and 34.21%, respectively. In plantations raised under **NPV** schemes, weighted average survival per cent for the year 2016-17, 2017-18 and 2018-19 was 30.99%, 36.0% and 43.84%, respectively (**Table-7**).

Table-7: Weighted average survival under various schemes in Higher Altitude Area

Sl. No.	Name of Scheme	Weighted Average Survival (%)		
		2016-17	2017-18	2018-19
1.	Compensatory Afforestation	35.63	46.33	43.03
2.	CAT PLAN	32.75	34.23	34.21
3.	NPV Plantation	30.99	36.0	43.84

Plant Species Performed Better in Plantation Sites:

The growth performance of the species viz., *Abies pindrow*, *Acacia auriculiformis*, *Acacia catechu*, *Acacia nilotica*, *Acer sp*, *Aconitum heterophyllum*, *Acorus calamus* *Aegle marmelos*,

Aesculus indica, *Albiza chinensis*, *Albizia lebbeck*, *Albizia procera*, *Albizia stipulata*, *Alnus nitidia*, *Angelica glauca*, *Arnebia benthami*, *Arundinaria falcata*, *Azadirachta indica*, *Bauhinia vahlii*, *Bauhinia variegata*, *Cassia fistula*, *Cedrela serrata*, *Chlorophytum borivilianum*, *Dalbergia sissoo*, *Dendrocalanus strictus*, *Desmodium elegans*, *Diospyros sp*, *Ficus palmata*, *Ficus religiosa*, *Grevia optiva*, *Grevillea robusta*, *Hedychium acuminatum*, *Hippophae rhamnoides*, *Juglans regia*, *Jurinea macrocephala*, *Leucaena leucocephala*, *Lonicera sp*, *Melia azedarach*, *Morus alba*, *Olea cuspidate*, *Phyllanthus emblica*, *Picea smithiana*, *Picrorhiza kurroa*, *Pinus gerardiana*, *Pinus roxburghi*, *Pinus wallichiana*, *Polygonatum chirifolium*, *Polygonatum verticillatum*, *Prunus armaniaca*, *Prunus cerasoides*, *Prunus mira*, *Prunus padus*, *Prunus persica*, *Prunus serasoides*, *Psidium guajava*, *Punica granatum*, *Pyrus pashia*, *Quercus dilatata*, *Quercus glauca*, *Quercus ilex*, *Quercus incana*, *Quercus leucotrichophora*, *Rheum australe*, *Robinia pseudoacacia*, *Rosa macrophylla*, *Salix alba*, *Salix sp*, *Populus sp*, *Salix tetrasperma*, *Sapindus mukorossi*, *Saussurea costus*, *Selinum sp*, *Syzygium cumini*, *Taxus wallichiana*, *Tectona grandis*, *Terminalia arjuna*, *Terminalia bellerica*, *Terminalia chebula*, *Toona ciliata*, *Ulmus wallichiana*, *Valeriana jatamansi*, *Viola serpens*, *Zizyphus mauritiana*, etc. was better in all the plantation sites.

The medicinal plants like *Aconitum heterophyllum*, *Acorus calamus*, *Angelica glauca*, *Arnebia benthami*, *Chlorophytum borivilianum*, *Hedychium acuminatum*, *Picrorhiza kurroa*, *Polygonatum chirifolium*, *Polygonatum verticillatum*, *Rheum australe*, *Saussurea costus*, *Selinum sp*, *Valeriana jatamansi*, *Viola serpens* etc. was better in all the plantation sites.

Plant Species Not Performed Well in Plantation Sites:

The planted species like, *Acacia catechu*, *Acacia nilotica*, *Aconitum deinorrhizum*, *Ailanthus excelsa*, *Ailanthus sp.*, *Albizia lebbeck*, *Alnus sp*, *Angelica glauca*, *Arundinaria falcata*, *Bauhinia variegata*, *Cedrus deodara*, *Dactylorrhiza hatagirea*, *Dalbergia sissoo*, *Dendrocalamus strictus*, *Juglans regia*, *Melia azedarach*, *Phyllanthus emblica*, *Picrorhiza kurroa*, *Pinus roxburghii*, *Prunus armeniaca*, *Prunus cerasoides*, *Prunus mira*, *Prunus persica*, *Punica granatum*, *Pyrus pashia*, *Quercus leucotrichophora*, *Robinia pseudoacacia*, *Sapindus mukurossii*, *Syzygium cumini* and *Terminalia bellerica* did not performed well in some of the plantation sites.

In the plantation sites where grasses were planted under the scheme improvement of alpine pasture, the biomass of grasses inside the plantation area was more than that of outside the plantation area.

Reasons for Low Plant Survival Per cent:

The low survival percentage in some of the sites was due to damage caused by snow, wild animal, grazing, monkeys, debris of road construction and fire incidences. Some of the plantation sites were fully burnt by forest fire having nil or very less survival. The less survival in some of

the plantation sites was due to wrong selection of sites, steep slope, heavy mortality of naked rooted plants and infestation of *Lantana camara* and bushes.

At the State level, under the **Compensatory Afforestation (CA)** plantations raised during 2016-17, survival in 30.61%, 44.90%, 12.24% and 12.24% plantation site was very good, good, average and below average, respectively. During 2017-18, survival in 24.0%, 34.00%, 30.0% and 12.0% plantation sites was very good, good, average and below average, respectively. During 2018-19, survival in 16.67%, 50.0%, 26.67% and 06.67% plantation sites was very good, good, average and below average, respectively.

Under the **Catchment Area Treatment Plan (CAT Plan)** plantations raised during 2016-17, survival in 40.82%, 48.98% and 10.20% plantation sites was good, average and below average, respectively. During 2017-18, survival in 37.78%, 44.44% and 17.78% plantation sites was good, average and below average, respectively. During 2018-19, survival in 40.0%, 48.0% and 12.0% plantation sites was good, average and below average, respectively.

Under the **NPV** plantations raised during 2016-17, survival in 35.29%, 41.18%, 17.65% and 5.88% plantation sites was very good, good, average and below average respectively. During 2017-18, survival in 42.11%, 42.11%, 10.53 and 05.26% plantation sites was very good, good, average and below average, respectively. During 2018-19, survival in 18.33%, 33.33%, 36.67% and 11.67% plantation sites was good, average and below average, respectively.

Under the **Soil & Water Conservation (S & WC)** plantations raised during 2016-17, survival in one plantation site was below average. The above details are being given in the **Table-8**.

Table-8: Details of Number of Sampled Sites under Different Survival Categories in Various Schemes in the State of Himachal Pradesh

PERCENTAGE OF SITES UNDER DIFFERENT SURVIVAL CATEGORY									
Year of Plantation	Total Sites Sampled	0-30% (Below Average)		31-50% (Average)		51-70% (Good)		71-100% (Very Good)	
		Number	Per cent of total sites	Number	Per cent of total sites	Number	Per cent of total sites	Number	Per cent of total sites
A]. Compensatory Afforestation									
2016-17	49	15	30.61%	22	44.90%	06	12.24%	06	12.24%
2017-18	50	12	24.00%	17	34.00	15	30.00%	06	12.00%
2018-19	30	05	16.67%	15	50.0%	08	26.67%	02	06.67%
B]. CAT PLAN									
2016-17	49	20	40.82%	24	48.98%	05	10.20%	NA	NA
2017-18	45	17	37.78%	20	44.44%	08	17.78%	NA	NA

2018-19	25	10	40.00%	12	48.0%	03	12.00%	NA	NA
C]. NPV									
2016-17	34	12	35.29%	14	41.18%	06	17.65%	02	05.88%
2017-18	19	08	42.11%	08	42.11%	02	10.53%	01	05.26%
2018-19	60	11	18.33%	20	33.33%	22	36.67%	07	11.67%
D]. Soil and Water Conservation									
2016-17	01	01	100%	NA	NA	NA	NA	NA	NA

In the state level, weighted average survival per cent of the plantations raised under **Compensatory Afforestation** during the year 2016-17, 2017-18 and 2018-19 was 38.30%, 45.04% and 42.62%, respectively. Whereas, under **CAT PLAN**, weighted average survival per cent for the year 2016-17, 2017-18 and 2018-19 was 33.02%, 34.56% and 34.23%, respectively. The weighted average survival per cent for the plantations raised under **NPV** schemes for the year 2016-17, 2017-18 and 2018-19 was 28.54%, 38.0% and 40.81%, respectively. The plantations raised under **S & WC** schemes, weighted average survival per cent during the year 2016-17 was 33.17%, respectively (**Table-9**).

Table-9: Weighted average survival under various schemes in Himachal Pradesh

Sl. No.	Name of Scheme	Weighted Average Survival (%)		
		2016-17	2017-18	2018-19
1.	Compensatory Afforestation	38.30	45.04	42.62
2.	CAT PLAN	33.02	34.56	34.23
3.	NPV	28.54	38.0	40.81
4.	Soil & Water Conservation	33.17	NA	NA

While comparing the weighted average survival per cent among the various forest divisions of the state, maximum weighted average survival per cent of the plantations raised under **Compensatory Afforestation** during the year 2016-17, 2017-18 and 2018-19 was 75.22% (Nurpur Forest Division), 66.92% (Chamba Forest Division) and 54.04% (Joginder Nagar), respectively. Whereas, under **CAT plan**, maximum weighted average survival per cent for the year 2016-17, 2017-18 and 2018-19 was 58.62% (Rampur Forest Division), 59.02% (Dalhousie Forest Division) and 57.56% (Rampur Forest Division), respectively.

The maximum weighted average survival per cent for the plantations raised under **NPV** schemes for the year 2016-17, 2017-18 and 2018-19 was 47.47% (Una Forest Division) and 69.73% (Hamirpur Forest Division) and 61.64% (Nurpur Forest Division), respectively. The plantations

raised under S & WC schemes, maximum weighted average survival per cent during the year 2016-17 was 33.17% in Kunihar Forest Division.

Selected plantation sites were examined for area accuracy with the help of GPS by way of traversing around the boundary of the plantation and area recorded for each plantation site is given in the **Monitoring Finding Chapter** of the Report. The summary of the area measured for area accuracy with variation is given in **Table-10**. During the year 2016-17 area recorded for all the schemes for 65 (50.0%) plantation sites was more than the area given in the record (191.95 ha i.e. 26.44%). Whereas, for 65 (50.0%) sites area was less than the area given in the plantation journal (101.22 ha i.e. 14.07%). Similarly, during the year 2017-18 area recorded for 70 (63.64%) plantation sites was more than the area given in the record (220.97 ha i.e. 26.68%). Whereas, during 2018-19 area recorded for 40 (36.36%) plantation sites area was less than the area given in the plantation journal (125.61 ha i.e. 31.03%). Whereas, during the year 2018-19 area recorded for 78 (65.55%) plantation sites was more than the area given in the record (297.61 ha i.e. 38.54%). Whereas, for 41 (34.45%) plantation sites area was less than the area given in the plantation journal (40.27 ha i.e. 11.26%). During the year 2016-17, 2017-18 and 2018-19 forest fire was reported in 21 and 26 and 23 plantation sites, respectively.

Table-10: Depicting Area Measurements of Plantation Sites

Year of Plantation and Scheme	Total Sites Sampled		Number of Sites Having Same or Excess Area			Number of Sites Having Less Area			Variation in Area	
	Number of Sites	Area (ha)	Nos.	Area as per Record	GPS Record	Nos.	Area as per Record	GPS Record	Excess Area (ha)	Less Area (ha)
2016-17										
CA	46	533.84	11	179.03	196.16	35	362.3	354.81	17.13 (9.57%)	7.49 (2.07%)
CAT PLAN	49	328	28	166	208.58	21	162.0	148.97	42.58 (25.65%)	13.03 (8.04%)
NPV	34	572	25	377	507.04	09	195.0	114.3	130.04 (34.49%)	80.7 (41.38%)
S&WC	1	4	1	4	6.2	NA	NA	NA	2.2 (55.0%)	NA
TOTAL	130	1437.84	65	726.03	917.98	65	719.3	618.08	191.95 (26.44%)	101.22 (14.07%)
2017-18										
CA	48	656.78	32	484.04	606.39	16	172.74	141.27	122.35 (25.28%)	31.47 (18.22%)
CAT PLAN	41	231.63	25	150.63	187.31	16	81.0	70.47	36.68 (24.35%)	10.53 (13.0%)
NPV	21	344.6	13	193.60	255.54	8	151.0	67.39	61.94 (31.99%)	83.61 (55.37%)

TOTAL	110	1233.01	70	828.27	1049.24	40	404.74	279.13	220.97 (26.68 %)	125.61 (31.03 %)
2018-19										
CA	32	414.862 6	19	179.542	275.17	13	139.69	121.07	95.628 (53.26%)	18.62 (13.33 %)
CAT PLAN	25	164.4	14	94.17	111.4	11	53.0	47.7	17.23 (18.30%)	5.3 (10.0%)
NPV	62	663.5	45	498.5	683.26	17	165.0	148.65	184.76 (37.06%)	16.35 (9.91%)
TOTAL	119	1242.76	78	772.21	1069.83	41	357.69	317.42	297.61 (38.54%)	40.27 (11.26 %)

There is no fixed criteria for acceptance of variation in area measurement. Usually, while taking the areas for the plantation activities, the field functionaries of the forest department make use of the means and tools which may have many limitations and not being able to calculate the exact area under the verticality of the hills and mountains. For instance, measurement of distance from plant to plant or row to row is extrapolated for calculation of the entire plantation area of the forest land. During the monitoring and evaluation process, the plantation areas were measured with the help of the modern tools/ equipment e.g. Global Position System (GPS), which is based on the principle of the triangulation method of the area measurement and the areas were measured along outside of the periphery of the plantation / fencing. More importantly, the terrain of the hills and the topography encompasses the slopes and deep gorges making it infeasible to fence the plantation areas entirely and some portion is evidently left out which accounts for the less area measurement by the GPS during the monitoring and the evaluation process. Apart from this, the undulating surfaces, steep slope and the rugged landscapes also accounts for the variation in the area.

The survival and growth performance of the plantation commensurate with the topography and site conditions in most of the sites. Mostly the sites selected for plantation was suitable for the species planted by the Department. In lower as well higher altitude, most of the plantation sites were well fenced however, in some sites fencing was damaged, burnt by fire or partially erected. Some of the plantation sites were not fenced because they were falling in the Wildlife Sanctuary area and also there was no provision of fencing under NPV scheme. The plantation journals of most of the plantation sites were properly maintained by the Forest Department.

Socioeconomic Impacts:

The main objective of carrying out the socioeconomic survey was to assess the impact of the plantation for upliftment of the socioeconomic status of the residents of adjoining villages. Accordingly, socio-economic survey of nearby villages of the plantation sites was carried out.

The people of the surveyed villages were of the opinion that plantation activities will benefit the general public in the times to come. The plantation will definitely result in meeting out the requirements of the fuel, fodder, timber and will also help in soil conservation, recharging the water resources and maintenance of environment in general. It was the general perception of the people that there must be some provision for aftercare of plants because it was generally seen that lots of plantation campaigns are being executed by the Government through various agencies but the results are not so encouraging keeping in view the survival percentage. In some of the Forest Divisions, people of adjoining villages are of the opinion that plantations activities and fencing of the area has reduced the grazing ground for the cattle. The people are also concerned about grazing areas inside the sanctuary and demanding de-notification of sanctuary so that their traditional right could be protected in nearby areas.

The analysis of the perceived impacts of plantations under CAMPA reveals that substantial upliftment of the socio-economic status of the community/ surrounding villages should be the main concern while executing the plantation activities. There is need to foresee the benefits of the plantation to the local people in term of diversified goods and services such as timber, fuel-wood, fodder, non-timber forest products, water, wildlife protection and potential to reduce the human wildlife conflict. Therefore, during selection of species for planting, the opinion of local people should be considered beforehand and fruit-bearing species should also be planted to tackle monkey and wild animals menace. More number of fodder and fuel wood species needs to be included in forest plantations those directly benefiting rural masses. The area having infestation of Lantana and other weeds should be eradicated from the bushes before carrying out the plantation and during the maintenance of the plantation. People were also benefited by grass production due to fencing of the plantation site. Local people should be given awareness training on various forestry and environment issues. There is a need to make the provision for after care of the plantation so that the main objectives of the plantation can be achieved.

Constraints:

- ✓ The main constraint during and after plantation include forest fires, grazing and damage by wild animal. Accidental or intentional forest fires by local people during the month of summers results in irreparable damage especially to new plantations. People set on fire in the area with the intension to get new green grass for their cattle, goat and sheep. Grazing pressure of livestock also results in damage of plantation. Trampling and browsing damages seedling results into mortality and lower survival of plantation. Similarly, browsing by wild animals also damage the seedlings. The porcupine damages the seedlings of oak by cutting it at collar height. In many plantation area monkey has done lot of damage especially to the pine seedlings, they broken the top of the seedlings which hamper its height. Besides, other wild animal like Deer, Ghoral, Neelgai, Wild pigs, Rodents also damage and harm the planted seedlings.

- ✓ The land which are generally available for plantations are mostly refractory sites and less fertile. The better and fertile areas are used either for growing the agriculture or the horticulture crops or have already been used for carrying out plantations in the past. The survival of plantation in such harsh sites is also a big challenge. Therefore, plantation in such sites has less survival rate.
- ✓ The climatic conditions prevailing during planting seasons are also responsible for lesser survival of the plantations. Almost all the plantations carried out by forest department is completely dependent on rainfall .The survival percentage is affected due to dry season, low rainfall and erratic pattern of the rainfall during monsoon and winter season.
- ✓ The landslides in some plantation areas also damaged the planted seedlings, which ultimately resulted in lesser survival rate of the planted species. In Kinnaur district it was observed that frost, avalanche of glaciers resulted in mortality of the seedlings in some of the plantations.
- ✓ In some plantation sites heavy infestation of *Lantana camara* and other bushes & weeds was a hindrance in carrying out the plantation activities and it also affects the growth and survival of the planted species. Lantana is regarded as one of the worst weeds because of its invasiveness, potential for spread and economic and environmental impacts. Lantana forms dense, impenetrable thickets that take over native forests and pastures. It competes for resources and reduces the productivity of, pastures and forestry plantations.
- ✓ The selection of site is first and important step to ensure the success of plantation. However, sometimes sites having very steep slopes, shallow soil depth, rocky sites and low moisture retention capacity are selected for carrying out the plantation activities. The adverse site conditions coupled with harsh climatic conditions are also responsible for lesser survival of the plantation.
- ✓ The nurseries of species to be planted are located far away from the plantation sites. Many species such as Deodar are sensitive for shock. Therefore, transportation shock to seedlings also resulted in damage and lesser survival of planted species.
- ✓ In the higher altitude areas nomadic people keep their horses, cattle and sheep in the nearby area of the plantation. The movement of livestock by nomadic people through plantation areas has damaged some plantation sites.
- ✓ The selection of particular species for plantation is also important criterion for success of the plantation. Many factors such as species natural zone, aspect, slopes were not taken into consideration for planting a species. It was observed that in some areas deodar was planted in exposed site and below its natural zone of occurrence. Therefore, plantation of species in unsuitable sites resulted in lesser survival of the many species.
- ✓ In some of the areas, naked root plants did not respond well to the planted sites because some of the plantation sites were refractory, less fertile having shallow soil depth, low moisture retention capacity thereby causing the mortality of the plants.

Suggestions for Improvement:

- ❖ The selection of suitable site is important and prerequisite for making any plantation a success. The efforts should be made to select sites with good site conditions. The selection of species for plantation in particular area is also very important. Therefore, species proposed for planting should commensurate with site conditions. The people have specific choice for species and they mostly interested to plant the species which meet out fodder, fuel-wood and small timber requirement. Hence, opinion of local people should be taken under consideration during selection of species for plantation. Besides, it is also suggested that species of economic importance like medicinal plant tree species and wild fruit tree species should be planted.
- ❖ The quality of planting material, which is being grown in the nursery should be improved. The healthy planting stock raised from superior genotypes should only be used for plantation. This will ensure that plantation can survive in the adverse conditions prevailing in the plantation sites and thereby help in achieving the better survival rate in the field.
- ❖ The forest department may adopt the concept of planting the tall plants so that the plantations can be established in a lesser time and without much damage due to adverse conditions. The plantation of naked root stock should be avoided in stress sites.
- ❖ Plantations raised under CAMPA do not have provision of watch and ward. It becomes very difficult for concerned officials of forest department to look after the plantations regularly as they have to discharge other official duties from time to time. Without proper aftercare provisions plantations are being damaged by trespassers, grazers, fire, wild animals, etc. Therefore, to ensure success of the plantation, long term protection of plantation like provision for watch and ward at least for 4 to 5 years after plantation is required.
- ❖ There should be a provision of budget for preparation of site, which includes, removal of shrubs, bushes viz., *Lantana camara*, *Eupatorium* sp & other invasive species before carrying out the plantation and in regular interval till establishment of plantations.
- ❖ In NPV plantation, there is no provision of barbed wire fencing; as a result plantation areas are prone to grazing pressure. Therefore, it is suggested that plantation areas should be fenced with barbed wire fencing.
- ❖ The many plantation sites are located far away from permanent nurseries of the forest department, which resulted in increased transportation cost and damage of planting materials. Therefore, temporary nursery should be established near the plantation site in order to avoid the transportation damage to the plants and also to reduce the transportation cost.
- ❖ Use of artificial inoculation of seedlings with suitable mycorrhizal fungi can further improve the establishment and growth parameters of seedlings. The seedlings tailored

through artificial ecto-mycorrhizal inoculation are expected to grow faster and survive better after transplantation. Mycorrhizae play a significant role in plant nutrition, growth improvement, successful afforestation, reforestation, bio-control of pathogens and land reclamation programmes. Ectomycorrhiza (EM) occurs in trees belonging to the Pinaceae (Pine, Spruce), Fagaceae (Oak, Chestnut), Betulaceae (Alder and Birch), Salicaceae (Poplar and Willow), Myrtaceae (Eucalyptus). Some tree genera such as *Alnus*, *Eucalyptus*, *Cupressus*, *Juniperus*, *Ulmus* form both ectomycorrhizae and endomycorrhizae depending on soil conditions and tree's age. Nursery bags can be artificially inoculated with culture during seed sowing and it will reduce pressure to bring forest soil as mycorrhizal inoculum. The inoculated seedlings will have better growth, survival and establishment after transplantation. It will also help to reduce the nursery to field transplantation period, while raising the tall planting stock.

- ❖ To counteract the incidences of occurrence of forest fires in Chir-pine forests, broadleaved species need to be mixed with the species to act as natural barriers within the Chir-pine zone. Fire line should be created and maintained properly throughout the year. There should be separate provision for deployment of watch guards for the better management of fire occurrence and wild animals induced damage to plantation.
- ❖ Some of the plantation sites having steep slopes, shallow soil depth, drought conditions and low moisture retention capacity thereby resulted into lesser survival rate of planting seedlings of various tree species. In such sites, contour plantation should be carried out for better soil & water conservation and increasing the survival of plantation. The concept of bigger pit size with imported loamy soil should be introduced for better survival in harsh sites. The hardened/conditioned nursery stock need to be planted for better out planting success under un-favorable conditions. The need based construction of check dams in plantation sites for improving the site moisture regime and utilizing the water bodies for irrigation purposes during initial years of establishment of plantations will increase the survival rate.
- ❖ Local people also needs to be educated towards forestry programmes and about the benefits of the plantation for better coordination and thereby protecting plantations from domestic animals in far flung sites and also from fire incidences.

DETAILS OF FINANCIAL OUTLAY FOR INTEGRATED APOs											
Physical Activities and Financial Targets under APOs of CSS, State Plan, CAMPA & any other scheme											
2023-24* expected											
S. No	Activities	CAMPA		CSS (Centrally Sponsored Schemes)		External Aided Project		State Plan		Any other scheme	
		Physical Area in ha.	Financial Rs.in crores	Physical Area in ha.	Financial Rs.in crores	Physical Area in ha.	Financial Rs.in crores	Physical Area in ha.	Financial Rs.in crores	Physical Area in ha.	Financial Rs.in crores
1	Fire Prevention and control operations	0	10	0	9.79	0	0	0	2.15	0	0
2	Integrated Wildlife Management	0	16.73	0	4.75	0	0	0	91.7	0	0
3	Forest Protection	0	14.65	0	0	0	0	0	0	0	0
4	Project Tiger	0	0	0	0	0	0	0	0	0	0
5	Project Elephant	0	0	0	0	0	0	0	0	0	0
6	Green India Mission	0	0	0	18	0	0	0		0	0
7	Forest Infrastructure	0	10.2	0	0	0	0	0	25.66	0	0
8	Vehicles	0	0.45	0	0	0	0	0	3.29	0	0
9	Office Establishment	0	0.29	0	0	0	0	0	5.23	0	0
10	Hiring of buildings	0	0.36	0	0	0	0	0	0	0	0
11	Any other item	0	0	0	0	0	175	0	0	0	0
	0							0			

Format for Annual Plan of Operation Summary Submission 2023-24

Annual Plan of Operation (APO) for the Financial Year 2023-24 of HP State CAMPA

1. Date of Receipt: 05.01.2023
2. Date of approval of EC of State/UT: 23.01.2023
3. Date of approval of the Steering Committee: 24.02.2023
4. Total Amount/Outlay: 237.22 crore
5. Funds Status with the State/UT along with outlay proposed

S.No.	CAMPA Activity	Funds Available with the State/UT	Outlay proposed in crore
1	Mandatory Activity		
	CA/PCA/Additional CA	183.94	25.00
	Catchment Area Treatment Plan	442.87	24.00
	Integrated Wildlife Management Plan	237.59	16.73
	Others	32.80	1.03
2	Net Present Value	509.28	166.96
3	Interest	176.54	3.50
4	Other Components		

6. Funds released by State Government during the FY.

Year	APO approved by National Authority during current financial year	Funds Released by State Government	Funds Utilized by State Authority	Total Outlay for the current year
2018-19	127.72	127.72	128.26	0
2019-20	145.73	145.00	88.51	0
2020-21	158.39	150.99	119.48	0
2021-22	138.10	138.10	94.77	0
2022-23	190.23	140.01	40.65	0

7. Financial outlay/ Budgetary Support under various Schemes (amount spent)

Year	CSS		CAMPA	State Plan/ Scheme Fund	Any other scheme
	Name of the scheme	Expenditure Provisions			
2020-21	Fire Prevention and control operations	3.14	119.48	1.27	0
	Integrated Wildlife Management				
	Green India Mission				
2021-22	Fire Prevention and control operations	1.14	94.77	1.84	0

	Integrated Wildlife Management				
	Green India Mission				
2022-23	Fire Prevention and control operations	21.23	40.65 (up to 31.12.2022)	74.32	0
	Integrated Wildlife Management				
	Green India Mission				
2023-24*	Fire Prevention and control operations	32.54	237.22	128.03	0
	Integrated Wildlife Management				
	Green India Mission				

*Provision made in 2023-24. Details to be filled up Annexure IV

8. Status of Compensatory Afforestation

(Area in ha)

Afforestation required as per site specific scheme submitted along with approved proposal for diversion of forest land under FC Act, 1980 till 31.03.2022 (in Ha.)	Afforestation carried out in the State as per site specific schemes till 2022-23 (in Ha.)	Afforestation to be carried out 2023-24 (in Ha)	Afforestation carried out percentage (in Ha)	Total Balance upto 2024-25 (in Ha)
30321.9	28205.9	1315	93.0%	801

9. Balance afforestation status

(Area in ha)

Balance Afforestation request as per FC Act (in ha)	Balance Afforestation to be completed in Financial Year (in Ha)		
	2023-24	2024-25	2025-26
2112.77	1315	801	0

10. The details of APO are as under:

S. No.	CAF Act/ Rules	Activity	Proposed Outlay		Green Employment to be generated (in Mondays)	Page no.	Remarks
			Phy Target	Fin Target			
1. Site Specific Activities as per Section 6(a) of the CAF Act, 2016							
		Compensatory Afforestation	1315 Ha.	25	319400	2-126	
	Mandatory Activities	Catchment Area Treatment Plan	775 Ha.	24	312600	127-186	
		Integrated Wildlife Management Plan	Ls	16.73	348000	187-268	
		Other	Ls	1.03	17600	269-271	
		Total Site Specific Activities		66.76	997600		
2. Non-Site Specific -							
Activities as per Rule 5(2) of the CAF Rules 2018 (80%)							
	5(2)(a)	ANR					
	5(2)(b)	AR	4989 Ha.	46.63	968900	278-307	
	5(2)(c)	Silvicultural Operations	4747 Ha.	3.5	90900	308-328	
	5(2)(d)	Protection of Plantations and Forests	3763 No. B/Pillars 37 No. of hiring of vehicle Removal of Lantana	14.65	339400	329-386	
	5(2)(e)	Pest and Disease Control in operation	50	1.64	0		
	5(2)(f)	Forest fire prevention and Control operation	-	10	155800	387-452	
	5(2)(g)	Soil and Moisture Conservation works	Roof Rain WHS 36 No. Natural	52.38	226700	453-528	

			springs 183 No.43726 Rmt trenches 7315 No. Str.						
5(2)h	Voluntary relocation of villagers from Protected Areas	0	0	0	0	0	0		
5(2)(i)	Improvement of Wildlife Habitat	38 No.	0.18	0	0	0	529-530	Water ponds /Saltlicks / RRT	
5(2)j	Planting and rejuvenation of forest cover on non-forest land falling in wildlife corridors	0	0	0	0	0			
5(2)(k)	Establishment maintenance of animal rescue center and veterinary treatment facilities for wild animals	14 No.	1.12	0	0	0	530-531	Enclosure/ wildlife rescue equipment kits / Veterinary Treatment Facilities	
5(2)(l)	Supply of wood saving cooking appliances and other forest produce saving devices.	150 No. Solar water heater etc.	0.9	0	0	0	531		
5(2)(m)	Management of Biological Diversity and Resources	10000 No. Monkey sterilizations.	2.55	25900	532-533	1807600	532-533	Monkey capturing studies / survey	
	Sub Total 5(2) Rule -		6.75	105000	534				
5(3)(a).	Establishment upgradation and Maintenance of Modern Nursery	45 no.	6.75	105000	534				
5(3)(b)	Promoting conservation sustainable use and documentation of biological diversity	1 No.	0.05	0					
5(3) c	Purchase and maintenance of equipment of devices for	232 No.	1.68	0	534-539				

	communication, information and technology							
5(3)(d)	Construction upgradation and maintenance of inspection paths, forest roads, in forest areas, fire line, watch tower, check posts and timber posts	R/o & maint. of 278 No.paths Timber depots 6 No., Check post 6 No..	8	124500	543-567			
5(3)(e)	Construction of Residential and Official Buildings	65 no.	10.2	158900	539-543			
5(3)(f)	Casual engagement of local people or labours to assist regular staff of state forest department	0	0	0				
5(3)(g)	Survey and Mapping	42 No.	3	0	567-569			
5(3)(h)	Independent concurrent monitoring and evaluation and third party monitoring	Ls	2	0				
5(3)(i)	Publicity and Awareness Programme	0	0.8	0	569-572			
5(3)(j)	Production and distribution of quality planting material	20000 No.	0.4	8300	572			
5(3)(k)	Forest certification and development of certification standards	0	0.5	0	572			
	Sub Total 5(3) Rule -		33.38					
	Total of NPV		166.95	1807600				
4.								
6 (a) (i)	To offset incremental cost of CA /PCA at increased wages rate	0	0	0				
6(a) (ii)	To offset increased cost of C.A.T at increased wage rate	0	0	0	573			
	Sub Total of Interest							

6 (b) (iii)	To offset incremental cost of IWMP at increased wage rate	0	0	0	0
6 (b)(iv)	For disbursement of salary and allowances of member and staff	0	2	0	0
6 (b)(v)	For disbursement of sitting fees and allowances to nominated members	0	0.1	0	0
6 (b) (Vi)	Activities referred to in sub rule -(2) and (3) of Rule 5	0		0	0
	Sub Total Interest		2.1		
6 (b) (i)	Management of office establishment	0	0.29	0	0
6 (b) (ii)	Office equipment including computers and peripherals and its maintenance	0	0.3	0	0
6(b) (iii)	Hiring of staff cars for the use of officers and officials	0	0.45	0	0
6(b)iv	Hiring of buildings on lease for office establishment and residences of the officers	0	0.36	0	0
6(b) v	Other contingencies for management of state Authority	0	0	0	0
6(b) vi	Any other activity for management of forests and wildlife with the approval of steering Committee and included in the APO	0	0	0	0