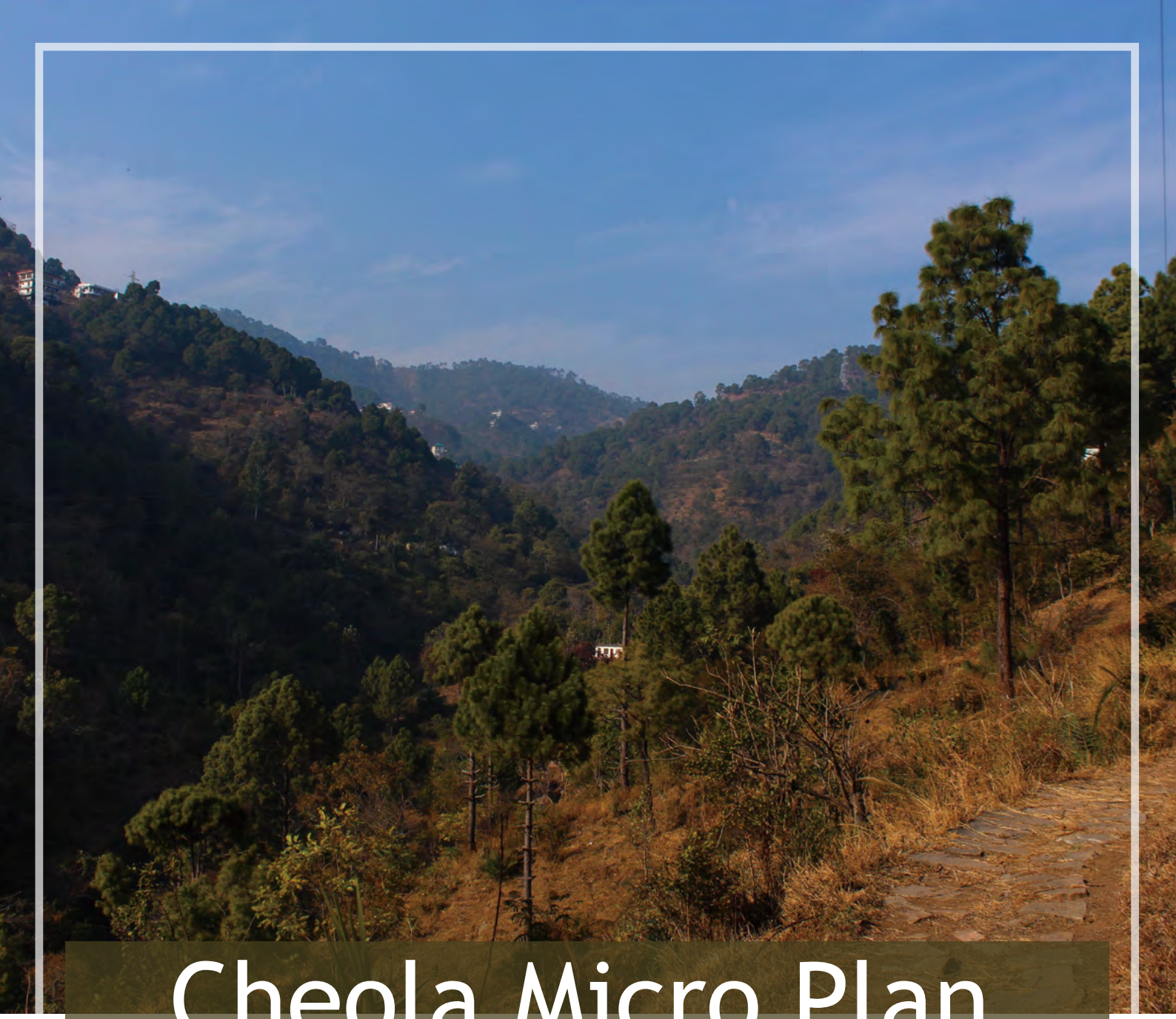

Cheola Micro Plan

Himachal Pradesh Forest Ecosystem Services (HP-FES) Project

Ministry of Environment, Forest and Climate Change

Himachal Pradesh Forest Department

german cooperation
DEUTSCHE ZUSAMMENARBEIT

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Published by:
Deutsche Gesellschaft für
Internationale
Zusammenarbeit (GIZ) GmbH

Registered offices
Bonn and Eschborn

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Programme/project description:
Indo-German Biodiversity Programme
Conservation and Sustainable Use of Biodiversity in India - Himachal Pradesh Forest Ecosystem Services Project (HP-FES)
The project aims to enable the Forest Department of Himachal Pradesh to introduce the Forest Ecosystem Services (FES) approach in the state's forest management system.
HP-FES

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On behalf of
German Federal Ministry for Economic Cooperation and Development (BMZ)

GIZ is responsible for the content of this publication.

Shimla, 2019

Micro plan for Cheola

Himachal Pradesh Forest Ecosystem Services (HP-FES) Project

Content

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CHAPTER- 1
Introduction

Forest Ecosystem Services Approach

Forests provide people with a lot of benefits. We get tangible things like fuel wood, timber, fodder, fruits and many other services from forests. Forests also regulate many aspects of the environment that we are benefiting from like water, air purity and micro climate. These benefits that we get from nature are called Ecosystem Services. The ones that we get from forests are therefore called Forest Ecosystem Services.The FES approach now means, that the forest is managed to produce those services that we need.

As the demands and importance for services differ much within society, a key element of the FES approach is to include all groups of people that have an interest in the forest that is objective to management. Like this, the FES approach aims of forests that enables a supply of FES that are most important to majority of the bestiaries.

HP-FES Project Background

The Indian and German Governments are working closely together in many areas that are important for our society. The GIZ works on behalf of the BMZ with the Himachal Pradesh Forest Department on new ways for forest management. The HP-FES project aims at the integration of forest management that addresses the wide range of benefits we get from the forest. These benefits are called as Forest Ecosystem Services. The Forest Ecosystem Services approach is nothing else, but managing the forest for a specific forest ecosystem service.

To identify which set of Forest Ecosystem Services the forest is managed for, the important stakeholders are consulted. With them together, the forest ecosystem services that are derived from the forest are listed and prioritised. Based on this, a management plan like this one is developed.

CHAPTER- 2

Cheola Forest Ecosystem Services Vision

Forests are ecosystems that need a long time for their development. The project can guide the plan for only two years or so. This is hardly anything, considering that the forests can be hundreds of years old. Therefore, it is important that a forest management has a long term vision and that the plan of today is in line with the long term vision.

Long Term Vision (30 years)

1. Water:
a. Increase of water supply by 20%.

2. Fuelwood and Fodder:
a. Fuelwood and fodder supply is sufficient for local communities. Their dependence on imported fodder reduced tangibly.

3. Forest composition and structure:
a. Improvement of tree cover in water recharge zones & fuelwood, fodder zones of different micro-watershed systems under the plan.

Measures:
a. Closure,
b. Enrichment tall Planting & staggered contour trenches in water recharge zones.
c. Overall fire protection measures with the participation of communities.

Mid Term Vision (15 years)

1. Water:
a. Increase of water supply by 10%.

2. Fuelwood and Fodder:
a. Less dependence on imported fodder.

3. Forest composition and structure:
a. Occurance of fire and grazing minimized.

Measures:
a. Communities are involved in fire protection and stopping of free grazing.

Short Term Vision (5 years)

1. Water:
a. Water flow is increased by 5 % of base line value.

2. Fuelwood and Fodder:
a. The improved economic status of communities results in people increasingly using LPG for fuel.

3. Forest composition and structure:
a. Success of plantations and increased moisture mechanism.

Measures:
a. Communities involved in fire protection and preventing free grazing in the forests.

Project Period (Till 2020)

1. Water:
a. Improved percolation and recharging indicated by extended period of water availability.

2. Fuelwood and Fodder:
a. Improvement in availability of fuelwood & fodder with effective fire protection measures.

3. Forest composition and structure:
a. Effective closure and fire protection by community participation through Self Help Groups.

Measures:
a. Enrichment tall plantation with barbed wire fencing with RCC fence posts in water recharge zones.
b. Staggered contour trenching and construction of check dams.
c. Human capacity development especially women Self Help Groups for alternate livelihood options to reduce financial load of procuring natural resource like water, fodder and fuelwood.

Micro plan Objective

To incorporate the Forest Ecosystem Services (FES) approach into the forest management in D-244 Cheola, a demarcated forest of Solan Forest Division, on the outskirts of Dharampur.

Methodology for data collection

1. The environmental data was collected based on field measurements, working plan of Solan forest division and the compartment history file of D-244 Cheola forest in Dharampur Forest Range.
2. Demographic data was collected by using **participatory rural appraisal (PRA)** approach, baseline survey report and records from other secondary sources like Gram Panchayats, Department of Animal Husbandry and local revenue office.
3. **Facilitation and matrix** were the tools used to collect information on seasonality and labour availability. Seasonality of engagement in agriculture, wage labour, migration, labour availability for project activities and rain and snowfall were recorded and information on the above was gathered by the PRA participants. The same tool was used to gather data for human wildlife conflict.
4. **Stakeholder map** was the tool used to collect data on various stakeholders. The participants were asked to write names of institutions falling in the three broader categories namely, *civil society, private players and state actors,* whom they considered potential in influencing the Project.

CHAPTER- 3
Data Collection Results

Environmental Data (Katal, Cheola, Manjher & Shai-Manjh)

ELEVATION RANGE: 958m - 1556m

Precipitation

Annual Average Precipitation:	533 mm - 2438 mm
Rain %:	100%
Snow %:	Very rare
Days with Frost:	During December to February
Extreme events:	None

Temperature

Mean maximum temperature:	15.4 - 32.2˚C
Mean minimum temperature:	1.8 - 19.8˚C

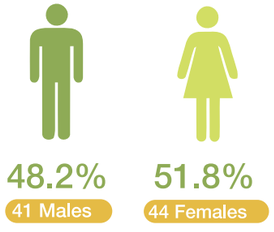
Forest types and area

Planning Area: 136.80 hectares
Total Area: 136.80 hectares

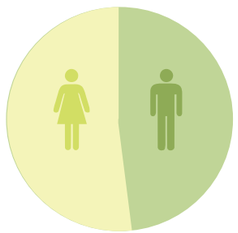
Forest Type	Area
Chir Pine	101.80 ha
Broad Leaved/ Scrub	35 ha

Demographic Data (Katal)

POPULATION



GENDER RATIO



There are 41 males against 44 females

LIVESTOCK

OCCUPATION

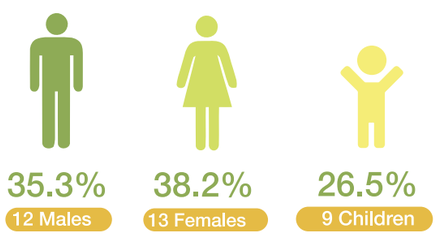
S.No.	Job Type	No. of Individuals
1.	Government	2
2.	Private	5
3.	Self Employed	1
4.	Agriculture/ Horticulture	14
5.	Artisans	3

LAND HOLDING

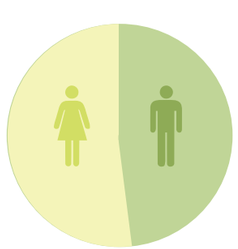
S.No.	Land Holding Type	No. of Households
1.	Marginal	21
2.	Small	4
3.	Medium	—
4.	Large	—

Demographic Data (Manjher)

POPULATION



GENDER RATIO



There are 12 males against 13 females

LIVESTOCK

OCCUPATION

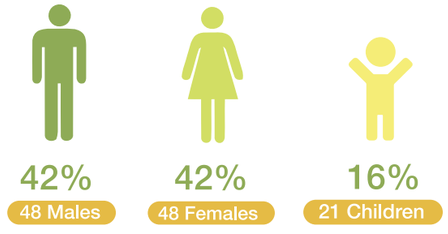
S.No.	Job Type	No. of Individuals
1.	Government	1
2.	Private	3
3.	Self Employed	2
4.	Agriculture/ Horticulture	9
5.	Artisans	—

LAND HOLDING

S.No.	Land Holding Type	No. of Households
1.	Marginal	6
2.	Small	3
3.	Medium	—
4.	Large	—

Demographic Data (Manjh)

POPULATION



GENDER RATIO

There are 48males against 48 females

LIVESTOCK

OCCUPATION

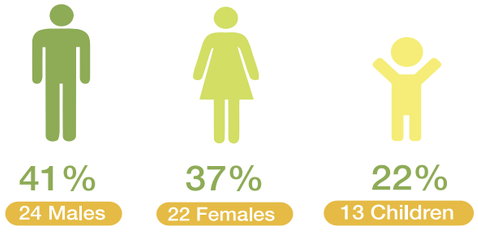
S.No.	Job Type	No. of Individuals
1.	Government	—
2.	Private	—
3.	Self Employed	2
4.	Agriculture/ Horticulture	14
5.	Artisans	1

LAND HOLDING

S.No.	Land Holding Type	No. of Households
1.	Marginal	17
2.	Small	—
3.	Medium	—
4.	Large	—

Demographic Data (Sherla)

POPULATION



GENDER RATIO

There are 24 males against 22 females

LIVESTOCK

OCCUPATION

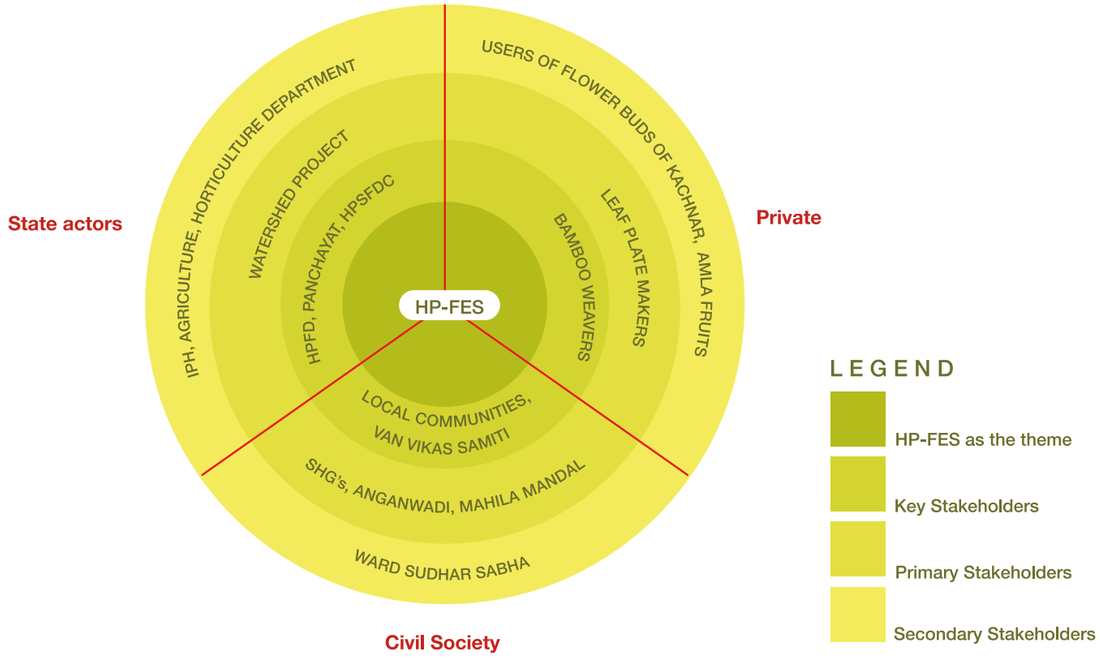
S.No.	Job Type	No. of Individuals
1.	Government	—
2.	Private	—
3.	Self Employed	1
4.	Agriculture/ Horticulture	7
5.	Artisans	4

LAND HOLDING

S.No.	Land Holding Type	No. of Households
1.	Marginal	—
2.	Small	11
3.	Medium	—
4.	Large	—

Seasonality of Labour Distribution

Major Stakeholders



The inner most circle consists of the key stakeholders, followed by primary and seconday stakeholders with HP-FES as the theme.
The 3 categories represent as to which class does each stakeholder belong.

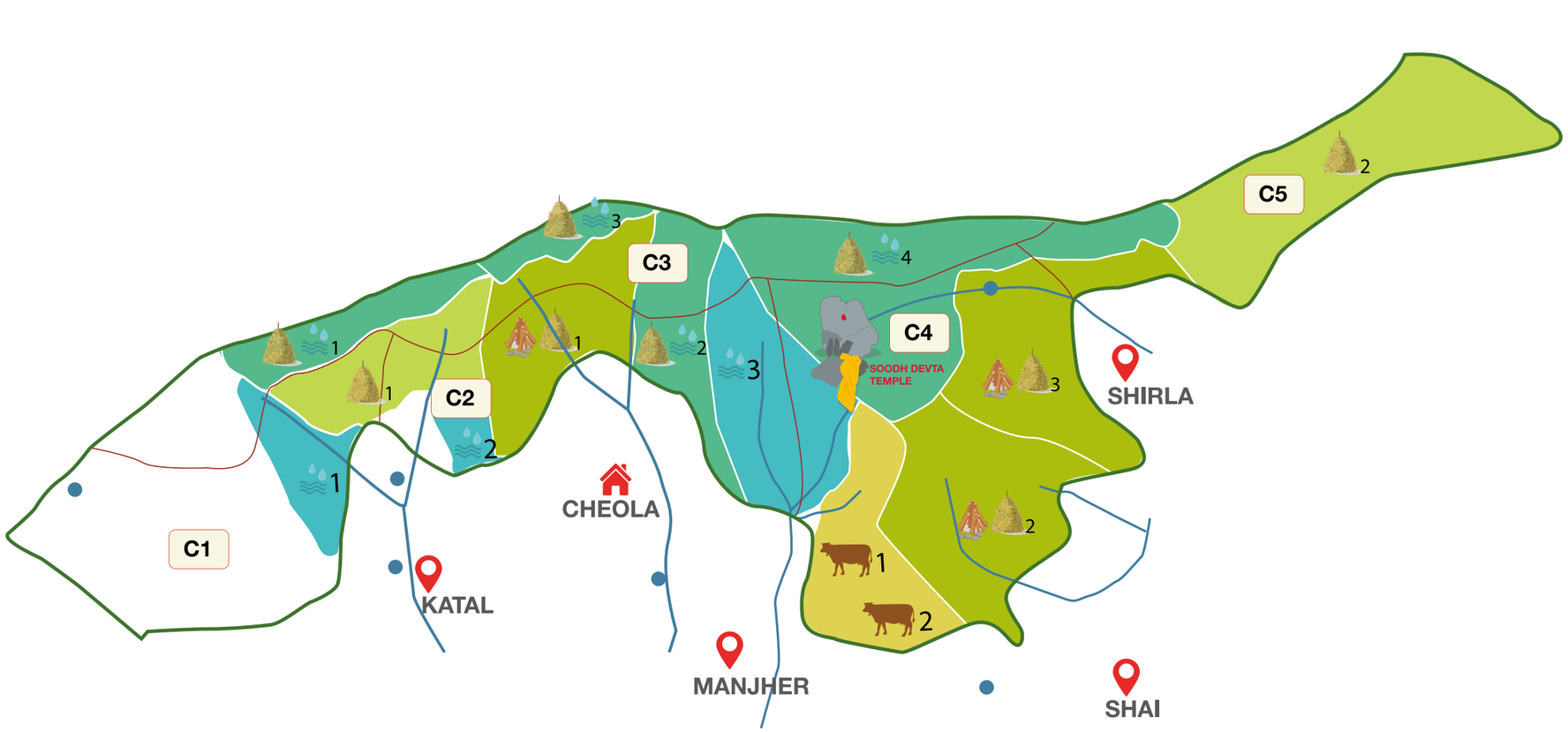
Category/ Class	Key Stakeholders	Primary Stakeholders	Secondary Stakeholders
Civil Society	Local communities, Van Vikas Samiti	Self Help Groups, Anganwadi, Mahila Mandal	Ward Sudhar Sabha
Private	Bamboo weavers	Leaf plate makers (Bauhinia)	Users of flower buds of kachnar, use of amla fruits for pickles etc.
State	HPFD, panchayat and HPSFDC	Watershed Project	Department of Irrigation and Public Health, Agriculture and Horticulture Department.

CHAPTER- 4

Rankwise Priority Forest Ecosystem Services

RANK	FOREST ECOSYSTEM SERVICE
1.	Watershed protection
2.	Fodder
3.	Fuelwood
4.	Non Timber Forest Products
5.	Timber wood (Symbol Copyright: Jan Sosse)
6.	Spiritual service

Priority and Intervention Map



The above map consists of the forest boundary and the areas for the prioritised Forest Ecosystem Services.

DISCLAIMER: This map is only for marking the forest boundaries and not for any legal purpose.

Zonewise Management

KATAL

FES ZONE	FOREST ECOSYSTEM SERVICE	COMP. NUMBER	INTERVENTIONS
1 (W-1)		C1, C3	Enrichment tall planting; Contour trenches; Broad leaved species
1 (F-1)		C2, C1	Fodder species; No grazing; Bamboo in depressions
2 (W-2)		C2	Ban Oak; Bamboo; RCC post fence; Enrichment tall planting; Fire Protection; Contour trenches
1 (Fwt-1)	+	C3	Fodder species; Contour trenches; No grazing
1 (FWf-1)	+	C2, C3	Enrichment tall broad leaved plantation; Bamboo in depression along nala; Contour trenches

CHEOLA

FES ZONE	FOREST ECOSYSTEM SERVICE	COMP. NUMBER	INTERVENTIONS
2 (Fwt-2)	+	C2, C3	Ban Oak; Kachnar; Bamboo in depressions; RCC post fence; Contour Trenches; 2 check dams in nala; Grass cut and carry system; Tall planting
3 (Fwt-3)	+	C3	Fodder species; Legume grass seedings; No grazing; Contour Trenches

MANJH/ MANJHER

FES ZONE	FOREST ECOSYSTEM SERVICE	COMP. NUMBER	INTERVENTIONS
3 (W-3)		C2, C3, C4	Contour Trenches; 2 check dams near nala; Broad leaved species
1 (G-1)		C4	Maybe left for grazing No Treatment Suggested
2 (G-2)		C4	Maybe left for grazing No Treatment Suggested
2 (FWf-2)	+	C4	Bamboo in depressions towards lower side; Broad leaved tall plants
4 (Fwt-4)	+	C3, C4	Bamboo in depressions; Contour Trenches; Broad leaved tall plants
3 (FWf-3)	+	C4	Enrichment tall broad leaved plantation; Bamboo in depression along nala
2 (F-2)		C5	Maybe left for grazing and fuelwood. No Treatment Suggested

The interventions on the yellow colour box are not provisioned under the HP-FES Project.

Treatment Plan and Budgeting for Micro Water Shed

Treatment Plan for Katal Micro-Watershed

Summary (Fencing & Planting i/c SCT and Nursery) of Katal MWS										
FES Zone	**C No.**	**Name of Activity**	**Formation Cost (in ₹)**		**Maintenance Cost in Year (in ₹)**					**Total Cost (in ₹)**
			Fencing	**Planting**	**1st**	**2nd**	**3rd**	**4th**	**5th**	
W-1	C1 and C3	Zone -1 Tall Enrichment Planting 800 plants per ha - 3.85 ha	2,61,784	2,37,495	14,553	9,625	7,315	5,005	5,005	540,782
W-2	C2	Zone -3 Enrichment Tall Planting 800 plants per ha - 2.50 ha	1,91,289	1,55,493	9,450	6,250	4,750	3,250	3,250	373,732
		Nursery cost of plants for Katal MWS	0	1,99,695	45,9 93	27,910	18,083	10,221	10,221	312,123
		Total	**4,53,073**	**5,92,683**	**69,996**	**43,785**	**30,148**	**18,476**	**18,476**	**12,26,637**

Treatment Plan for Manjher Micro-Watershed

Summary (Fencing & Planting i/c SCT and Nursery) of Manjher MWS										
FES Zone	**C No.**	**Name of Activity**	**Formation Cost (in ₹)**		**Maintenance Cost in Year (in ₹)**					**Total Cost (in ₹)**
			Fencing	**Planting**	**1st**	**2nd**	**3rd**	**4th**	**5th**	
W-3	C2, C3 and C4	Zone -1 Enrichment Tall Planting 500 Plants per Ha - 8.75 ha	1,71,188	1,34,567	33,075	21,875	16,625	11,375	11,375	4,00,080
		Nursery cost of plants for Manjher MWS	0	60,378	14,190	8,514	5,534	31,22	3,122	94,860
		Check Dams in Manjher Nala 3 No		23,911						23,911
		Total	**1,71,188**	**2,18,856**	**47,265**	**30,389**	**22,159**	**14,497**	**14,497**	**5,18,851**

Treatment Plan for Cheola Micro-Watershed

Summary (Fencing & Planting i/c SCT and Nursery) of Cheola MWS										
FES Zone	**C No.**	**Name of Activity**	**Formation Cost**		**Maintenance Cost in Year (in ₹)**					**Total Cost (in ₹)**
			Fencing	**Planting**	**1st**	**2nd**	**3rd**	**4th**	**5th**	
Fwt-3	C3	Zone -2 Cheola Enrichment Tall Planting 800 Plants per Ha - 5.44 ha	3,52,709	3,28,083	20,563	13,600	10,336	7,072	7,072	7,39,435
		Nursery cost of plants for Cheola MWS	0	1,71,077	39,310	23,586	15,331	8,648	8,648	2,66,600
		Check Dams in Cheola Manjher Nala 3 No.			27,993					27,993
		Total	**3,52,709**	**4,99,160**	**87,866**	**37,186**	**25,667**	**15,720**	**15,720**	**10,34,028**

Budgeting on Human Capacity Building measures

Fire protection workshop budgeting

Fire Protection- Capacity Building of Community Members & FLS of HPFD											
S. No.	Particulars	No of Hamlets	No of Person	Rate (in ₹)	Amt.	1st Yr		2nd Yr		Total	
						Phy.	Fin. (in ₹)	Phy.	Fin. (in ₹)	Phy.	Fin. (in ₹)
1	Refreshment/ Lunch	4	4	180	2,880						
	Stationary	4	4	40	640						
	Resource Person (Honorarium and Travel)	1	2	4,000	8,000						
	Banner and Photography	1	1	350	350						
	Total				11,870	16	11,870			16	11,870
2	**Fire Fighting Tools**										
	Fire Rakers, Spade & Pick Axe	4	2	1,200	9,600						
	Power Tools for Cutting	1	1	2,5000	25,000						
	Fire Fighting Kit	1	4	1,500	6,000						
	Total		7		40,600	7	40,600			7	40,600
			Grand Total			**23**	**52,470**	**0**	**0**	**23**	**52,470**

Capacity Building of SHGs on Livelihood Improvement: Workshop Budget

S. No.	Particulars	No of SHG	No of Person	Rate (in ₹)	Amt. (in ₹)	1st Yr		2nd Yr		Total	
						Phy.	Fin. (in ₹)	Phy.	Fin.(in ₹)	Phy.	Fin. (in ₹)
1	Refreshment/ Lunch	6	12	170	12,240						
	Stationary	6	12	30	2,160						
	Resource Person (Honorarium and Travel)	2	4	2500	20,000						
	Banner and Photography	2	2	250	1,000						
	Total				35,400	72	35,400			72	35,400
2	Refreshment/ Lunch	6	12	170	12,240						
	Stationary	6	12	30	2,160						
	Resource Person (Honorarium and Travel)	2	4	2500	20,000						
	Banner and Photography	2	2	250	1,000						
	Rate Total				35,400						
			Grand Total			**72**	**35,400**	**72**	**35,400**	**144**	**70,800**

GRAND TOTAL OF HP-FES CONTRIBUTION IN THE FIRST YEAR = 23,75,539 INR

CHAPTER- 5

Monitoring and Evaluation

1. Increase of water supply in springs at Katal and Manjher

a. Availability of water flow and seasonality from a water source especially during summers.

2. Fodder: Improved fodder supply by 10%

a. Empowerment of Women SHGs.

b. Part of C2, C3, C4 & C5 being used for grass cut and carry.

3. Livelihood

a. Formation of women SHGs

VISITOR'S FEEDBACK

S. No.	Name	Address/ E-mail	Feedback

S. No.	Name	Address/ E-mail	Feedback

S. No.	Name	Address/ E-mail	Feedback

S. No.	Name	Address/ E-mail	Feedback

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