



Kharota Micro Plan

Himachal Pradesh Forest Ecosystem Services (HP-FES) Project

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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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Shimla, 2019

Micro Plan for Kharota
Himachal Pradesh Forest Ecosystem Services
(HP-FES) Project

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List of Abbreviations

BA	Basal Area
BMZ	German Federal Ministry for Economic Cooperation and Development
BS	Baseline Survey
CBD	Convention on Biodiversity
CHF	Compartment History File
DBH (dbh)	Diameter at Breast Height
ES	Ecosystem Services
FES	Forest Ecosystem Services
FT	Forest Type
HH	House hold
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HPFD	Himachal Pradesh Forest Department
M&E	Monitoring & Evaluation
MT	Metric Ton
PES	Payment for Ecosystem Services
PRA	Participatory Rural Appraisal
TEEB	The Economics of Ecosystems and Biodiversity
UPF	Undemarcated Protected Forest
VFMS	Village Forest Management Society

1 Introduction

1.1 Forest Ecosystem Services (FES) Approach

The ecosystem approach, as defined by the Convention on Biological Diversity (CBD) in 2000, is the integrated management of ecosystems to promote conservation and sustainable use of the services and goods provisioned by these ecosystems to be enjoyed equitably by all sections of society. These services and goods are together termed as “Ecosystem Services”.

The ecosystem services derived from forests came to be referred to as “Forest Ecosystem Services” or FES. The FES Approach may be defined as “Forest Management that aims at sustainable provision of a set of ecosystem services based on stakeholder choices”.

The FES Approach states that stakeholders prioritize ecosystem services based on their needs.

The forest management under FES Approach will be guided by the ecosystem service/s thus prioritised, with due importance given to the remaining goods and services.

1.2 Himachal Pradesh Forest Ecosystem Service (HP-FES) Project

1.2.1 Project Background

The German Federal Ministry for Economic Cooperation and Development (BMZ) commissioned Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) to partner with the Himachal Pradesh Forest Department (HPFD) to integrate the forest ecosystem services (FES) approach in forest management. The project activities started from April 2016. Using the FES approach in a microplan can facilitate institutionalizing of the approach in management and planning processes of HPFD.

1.2.2 Project Objective

The overall objective of the HP-FES Project is to enable HPFD to introduce the ecosystem approach into its forest management.

Micro plan for this site has been prepared considering the prioritized FES by the communities. In Kharota, the prioritized FES were bamboo, fodder and water.

1.3 Role of Microplan in New Working Plan Code

Since 1837, the Indian forests are managed under working plan guidelines. However, it evolved with changing society and policy demands. Until the National Working Plan Code (2004), the major focus was on timber extraction which in turn determined the amount to be planted and harvested. The Honourable Supreme Court of India with its ruling (Dec 1996) towards a blanket ban on green tree felling triggered a policy evolution, of which the first step was the Forest Working and Management Plan Code (2014). This Code facilitates management of Indian forests to improve the provision of ecosystem services to dependent population. This enabled FES approach in forest management. The FES approach makes participatory forest management plans (now known as microplans) essential in the new working plan code.

The National Working Plan Code 2014 has made provisions for use of microplans as tools for participatory forest management for forest areas under Joint Forest Management Committees (JFMCs) and working circle within the scope of the Forest Right Act 2006 and the Biodiversity Act 2002.

1.3.1 Objectives of the Microplan

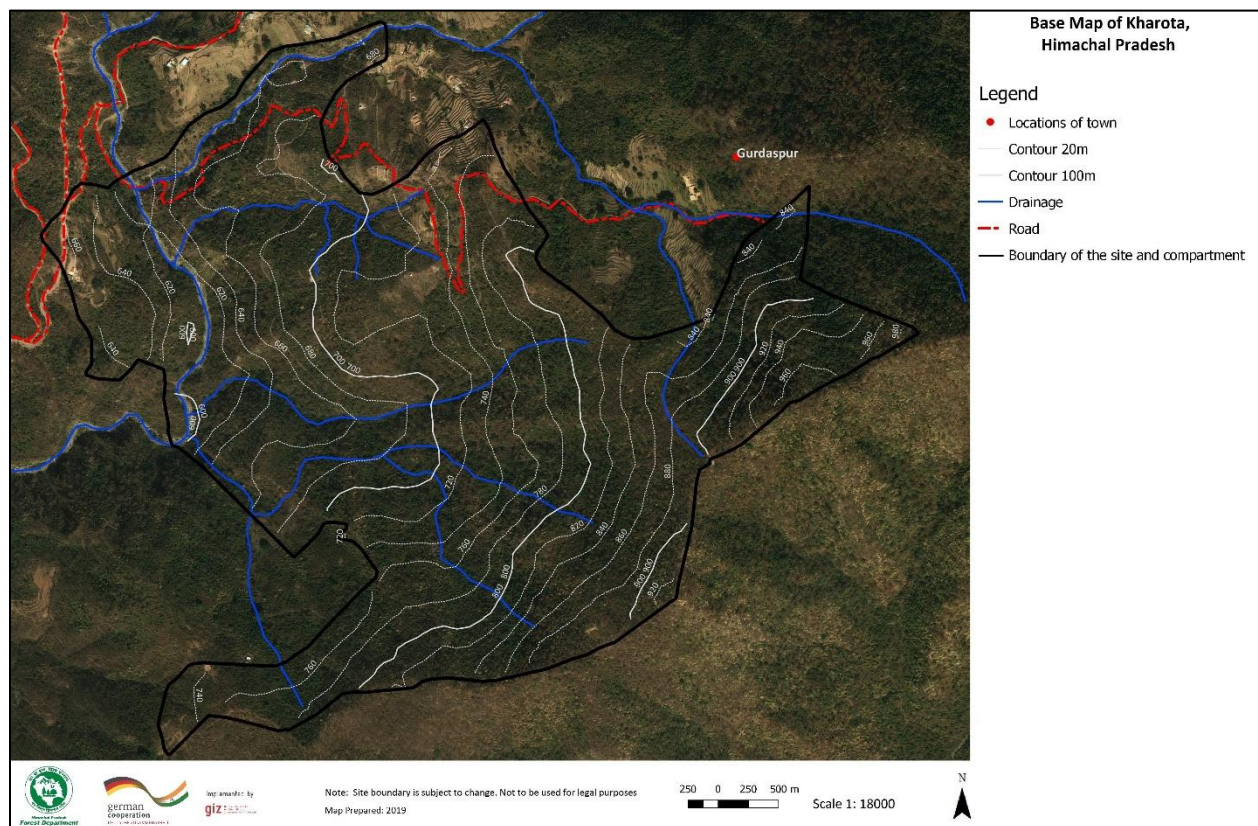
The objective of this microplan is to incorporate ecosystem services into the forest management in the Undemarcated Protected Forest (UPF) of Kharota. A forest assessment and a PRA exercise were carried out as a base to formulate the management objectives of the plan provided in Chapter 5.

1.3.2 Description of Subsequent Chapters of the Microplan

Chapter 2 describes the planning site. Chapter 3 provides the list of elected members of the VFMS Kharota along with their phone numbers. Chapter 4 discusses the aims of forest management clearly spelling out the short-term management objectives that leads to mid-term forest management objectives, resulting in long-term objectives of forest management. It is to be ensured that these objectives are in line with the visioning exercise undertaken with stakeholder participants during the PRA exercise. Chapter 5 dwells into the details of activities undertaken for meeting the short-term forest management goals for the prioritized FESs. Chapter 6 discusses the Monitoring and Evaluation plan for activities undertaken to meet the short-term forest management objectives. This chapter will also enlist the indicators for post assessment of the project and its long-term impacts. This is followed by Annexures that support the microplan.

2 Description of the Planning Site

The project site Kharota is about 98 km to the south of Kunihar (Map 2.1). The latitude and longitude values of extreme points of the project boundary in North, South, East and West are given in Table 2.1. The elevation range varies from 605 m to 910 m above mean sea level. This site falls in gram panchayat Patta Naali and forest beat Undermarketed Protected Forest (UPF) Kharota of Surajpur forest block, Kuthar Range and Kunihar Forest Division in district Solan.



Map 2.1: Kharota Base Map

Table 2.1: Coordinates of the extreme points of Kharota Planning Site

Direction	Latitude	Longitude
Northern-most point	30°54'19.63"N	76°54'10.25"E
Southern-most point	30°53'30.70"N	76°53'53.69"E
Eastern-most point	30°53'59.09"N	76°54'52.29"E
Western-most point	30°54'5.13"N	76°53'43.64"E

The UPF Kharota forest has human settlements. This includes the three hamlets of Kharota demonstration site namely Kharota, Thad and Kukdapani. The forests are abundant in species of Katha (*Acacia catechu*), *Albizia* spp., Tor (*Bauhinia vahlii*), Chal (*Anogeissus latifolia*), *Cassia fistula* and Bamboo (*Dendrocalamus strictus*). The understory comprises of *Lantana camara* to a large extent and other shrubs such as *Murraya koenigii*, *Adhatoda vasica*, *Carrisa opaca*, etc.

2.1 Methodology

2.1.1 Environmental Data

The environmental data describes the environment at the demonstration site. The environmental data is displayed in Table 2.3. This data has been collected based on field measurements and Working Plan of Kunihar Forest Division. There is no meteorological station located at Kharota hence data record of Working Plan Kunihar was used.

2.1.2 Demographic Data and User Rights

The demographic data is displayed in Table 2.4. The data was collected during participatory rural appraisal (PRA); from baseline survey report; and other secondary sources like documents from Gram Panchayats, Department of Animal Husbandry, Anganwaris (Department of Social Justice and Empowerment) and local Revenue Office.

A google image/map of the UPF Kharota forest was shown to PRA participants. Information on forest user rights already gathered from baseline survey was entered in the map. These information from village Kharota and its three settlements namely, Kharota, Thad and Kukdapaani were verified and recorded during the PRA and is displayed in Table 2.5 under section 2.2.2.

2.1.3 Seasonality of Labour Distribution

Matrix was used as a tool to collect information on seasonality and labour availability. Materials used were charts and sketch pens. Seasonality of engagement in agriculture, horticulture, wage labour, migration and labour availability for project activities along with the seasonality of rain was recorded. All this information is provided in Table 2.6 under section 2.2.3.

2.1.4 Stakeholder Mapping

A standard model of stakeholder mapping was used to understand the stakeholders in the planning site. PRA participants were explained the concept of stakeholder. A diagram (Figure 2.1) on a chart with four concentric circles and three axes emerging from the central point almost creating equal sections, with HP-FES as the centre theme was shared with the PRA participants. The participants were asked to write names of institutions falling in the three broad categories namely, civil society, private players and state actors, whom they considered potential in influencing the Project. The information provided by participants is given in Table 2.7 under section 2.2.4.

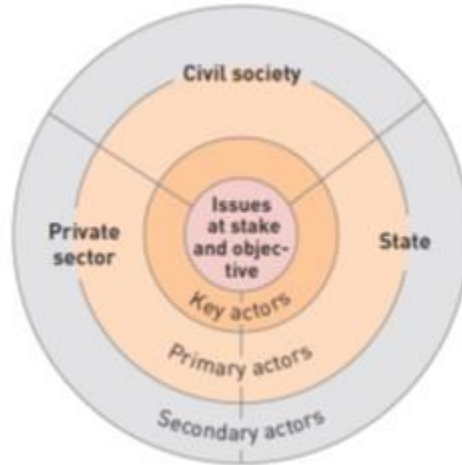


Figure 2.1: Stakeholder Diagram

2.1.5 Institutional Mapping

During PRA, Chapati diagram (Figure 2.2) was used to get information on existing institutions in Kharota. A chart with X- axis representing relevance of institution with reference to VFMS Kharota was prepared with inputs from the PRA participants. The importance of identified institutions was shown by the size of circle representing the institution while the interrelationship between organizations represented by the distances between the representing circles. They were also asked to suggest placement of these institutions on the chart to understand its importance (depicted by the circle size) and relationship (distance) with regard to the circle depicting VFMS. The information thus gathered is provided in Table 2.8 under section 2.2.5.

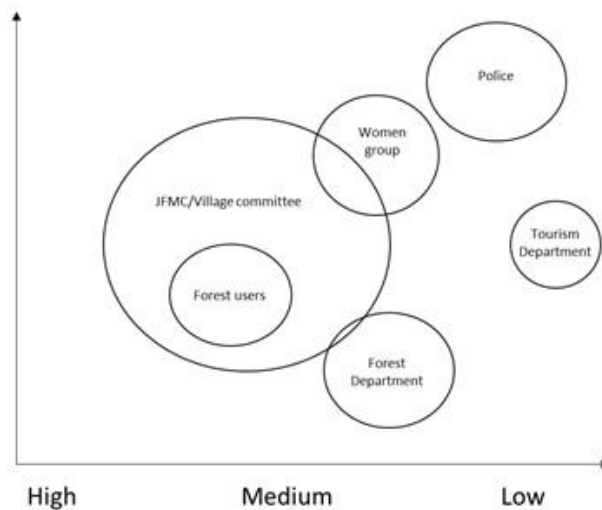


Figure 2.2: Example of Venn diagram [The big circle is the group for which the relations to institutions is looked at (Village Forest Management Committee or Village community)]

2.1.6 Forest

Data on forest was collected through forest assessment during baseline survey and from documents of HPFD like the Divisional Working Plans, Compartment History Files (CHF).

2.1.6.1 Forest Assessment During Baseline Survey

This section states in brief the methodology used for forest assessment. The forest assessment served three objectives namely,

- I. knowing the regenerating tree species;
- II. knowing the human impacts on different forest types; and
- III. information on Basal Area for each forest type

The assessment was based on circular plots arranged on a transect. A forest type was represented by at least two transects. Stands or parts of the forest type that were significantly different from other parts were assessed separately.

Allocation of the transect. The investigator chose a spot, representative of the forest type at the beginning of the transect about 10 m from the forest boundary. The transect was oriented along the longest site of the forest type. The first plot was 30 m away from the starting point of the transect and subsequent plots were placed at similar intervals. Holes, river beds, similar locations unrepresentative for the stand were skipped and plots marked a further 30 m away along the transect.

I. Assessment of regeneration: Regenerating tree individuals of different sizes were assessed in circular plots of different sizes. Details are shown in Table 2.2.

Table 2.2: Plot Size and Data Collected for Different Sizes of Regeneration Trees

Layers	Definition	Plot used for assessment	Area of each plot	Data collected (Same for all plots)
Seedling 1	Tree species >0-0.30 m height	Circular plot (r=1 m)	3.14 sq. m	<ul style="list-style-type: none">• Species Name• Number of individuals• Number of individual grazed/burnt/cut/others• Number of coppiced individuals• Photo number of species• Herbarium sheet number
Seedling 2	Tree species >0.30 m-1.3 m height	Circular plot (r=1.5 m)	7.06 sq. m	
Sapling 1	Tree species >1.3 m height and DBH <3.18 cm	Circular plot (r=2.5 m)	19.62 sq. m	
Sapling 2	Tree species DBH>3.18 cm-<7 cm	Circular plot (r=4 m)	50.24 sq. m	

For the analysis, the existing data was segregated in two categories: seedlings and saplings.

II. Assessment of Human Impact: Signs of human impact (trampling, fire, livestock dung, lopping, resin tapping) were assessed through ocular method within the 12 m radius and noted as present or absent.

III. Assessment of Basal Area: The basal area was assessed with the angle count method in seven locations in each forest type. This method calculates the basal area for one tree based on the distance between the tree and the investigator and the diameter at breast height (dbh). The investigator counts the trees that fall in a certain range of dbh (count factor 4 or 2) while turning 360°. The number of trees counted in this manner are multiplied by the chosen count factor to get the basal area for the stand. Average value of all figures thus gives the basal area for the forest type.

The boundary at the time of forest assessment and today are different. As a result, transects were not laid on the other side i.e. North Western side of compartment C1.

2.1.6.2 HPFD Documents like Divisional Working Plan and Compartment History Files

Documents of HPFD were referred for this work. The Compartment History File (CHF) and Divisional Working Plans were referred to study the management objectives as well as forest usages rights and practices by the local communities historically.

2.1.7 Assessment of Forest Ecosystem Services (FES)

The information on forest ecosystem services as found in the baseline survey was shared with the PRA participants. The forest ecosystem services prioritized by the communities during the baseline survey were shared and listed, ranked and verified on the chart.

Information on the extent of FES use and the quantity used by different households was verified during the PRA exercise. Information was also gathered on the demand trend, the FES availability and its change. Information on the factors/ drivers for such changes in trends was also gathered. PRA group was further probed for understanding whether the FES received was sufficient to fulfil the current demand. Though information was collected both from men and women ranking done by women is used for microplanning. The information thus collected has been presented in **Error! Reference source not found.** 2.11 under section 2.2.7.

2.1.8 Human-Wildlife Conflict

Human wildlife conflicts often hamper the well-being of people and information on the same was gathered during PRA. Facilitation and matrix were the tools used in collecting information. Wild animals causing damage to crop and animals along with the type and extent of damage were enlisted and recorded. The result of this exercise is given in Table 2.12 under section 2.2.8.

2.1.9 Conflict Management

Issue of prevalence of conflicts on the usage of FES was discussed with PRA participants. Facilitated focus group discussion and matrix were the tools used to gather data. Issues of conflict with parties and its intensity were identified and recorded. The PRA participants listed out both apparent and latent conflicts (past and ongoing) with respect to FES. The information has been recorded in Table 2.13 under section 2.2.9.

2.2 Results

This chapter provides the results of the data collected (through PRA, baseline survey, census data and forest records) as described in Chapter 2. This is presented in the form of table/s and figures supported by text.

2.2.1 Environmental Data

The environmental data collected are given in Table 2.3.

Table 2.3: Environmental Features of Kharota

Features	Value	Source
Elevation range (m)	606-910	Field Measurement
Annual average precipitation (mm)	92.32	Kunihar Working Plan, (2012-13 to 2026-27) for the period 2001-2010
As rain (%)	100	
As snow (%)	0	
Maximum Rainfall recorded (mm)	1470 in 2000	
Minimum Rainfall recorded (mm)	863.3 in 2009	
Dry month (average monthly precipitation < 50 mm)	April, October, November and December	
Number of days with frost	0	
Period of frost	Nil	
Temperature (°C/No of days)	Monthly mean maximum temp. range of 15.7-39.3 and mean minimum temp. 1.2 -20.9	Kunihar Working Plan, (2012-13 to 2026-27) for the period 2001-2010
Planning area in (ha)	33.2	CH File & Google map
Forest types and area (ha)	5B/C2 Northern Dry Mix Deciduous Forest (185.87 ha)	

2.2.2 Demographic Data and User Rights

The demographic data of Kharota FES site is shown in Table 2.4.

The villages of Thad and Kukdapani are not economically well off. Most of the population is dependent on wage labour, bamboo work and farming. General category account for 76% of the population and the remaining 24% belongs to the Scheduled Caste category. The average family size is 3.5 person per household. The water usage for irrigation purpose is from source other than kuhl, open well, river or watershed structure.

Table 2.4: Demographic Data of Village Kharota, Thad and Kukrapani

Category		Number	Source
Population (number)	Female	170	Patta Naali Gram Panchayat Record
	Male	190	
	Children (below 6 years)	26	Anganwari, Kharota
Gender ratio (adult, > 14 years) (number)	x/z	894 females against 1000 male	Calculation
Livestock (number)	Cow	35	Baseline Survey Data
	Buffaloes	18	
	Bullocks	0	
	Horses & mule	1	
	Sheep & goat	0 + 50	
Occupation No. of Individuals (No. of Households)	<i>Job type</i>		PRA data
	Government job	8	
	Private job	4	
	Self employed	32	
	Agriculture/Horticulture	21	
	Wage labour	32	
Land holding (no of HH)	Land holding (no. of HHs) classes		Baseline Survey, PRA
	Marginal	43	
	Small	7	
	Medium	2	
	Large	Nil	
Land use (%)	Agriculture	20	PRA
	Grassland	80	
	Pasture	0	
	Uncultivable	0	

PRA information revealed that about 82% farmers are marginal farmers. The Public Distribution System shop for the area is in Gurdaspura, 2 kms away from Kharota. Villagers of Kharota have access to education facilities with an upper primary school in the village. The Secondary School is in Mandhala about 5 kms and College at Barotiwala, located at 10 kms. The village has sub-centre of health at Kharota and community health centre at Nalagarh. The area is accessible by a motorable road with public bus services available. Baddi, located 16 km away is the nearest town accessed by villagers of Kharota for many essential services. The main and only source of drinking water is the piped water supply.

Bamboo work and working as daily wage labourers in and outside the village are among the main sources of income for the locals.

The hamlets of Kharota, Thad and Kukrapani enjoy rights for fuelwood collection, fodder harvesting and grazing. No other village has any rights in UPF Kharota forest (Table 2.5).

Table 2.5: Forest user rights of communities in UPF Kharota Forest

Village name	Timber		Fuelwood		Bamboo		Fodder		Grazing	
	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.	Int.	Ext.
Thad	×	×	✓	×	✓	×	✓	×	✓	×
Kharota	×	×	✓	×	×	×	✓	×	✓	×

(Ext.= user right holders outside Kharota; Int. = user right holders inside Kharota; × = No; ✓ = Yes)

Source: PRA at Kharota

2.2.3 Seasonality of Labour Distribution

The information on seasonality of labour distribution is important for planning the implementation of activities. The information collected during PRA using the season calendar has been presented in Table 2.6 below. The people are dependent largely on wage labour and go for it all the year round. Another activity, working with bamboos, that is undertaken round the year, is usually done in during morning and evening hours. People go for the cutting bamboo as labour for the contractors of HP Forest Corporation from September to November.

Table 2.6: Seasonal Calendar for Microplan Activities for Planning Site Kharota

Seasonal activity & climatic events	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Wage Labour												
Agri/ horticulture												
Migration												
Rains												
Bamboo work												
Fuelwood												
Labour availability (person months)	80	80	80	80	60	40	40	60	30	30	30	60

2.2.4 Stakeholder Mapping

The results from stakeholder analysis is presented below in Table 2.7. The most important stakeholders at village level were the Forest Guard, Bamboo Contractor and Ward Panch.

Table 2.7: Stakeholders of Kharota

Category /class	Key	Primary	Secondary
Civil Society	Ward Panch	Gram Panchayat	RUCHI NGO
Private	Bamboo Contractor	-	Private Sector in Baddi
State	Forest Guard	HPFD	<ul style="list-style-type: none"> • Agriculture • BDO Dharampur

2.2.5 Institutional Mapping

An institutional map was prepared during the PRA and the institutions with which villagers engaged were identified. The institutions, their importance, relevance and relations with VFMS Kharota were probed. The results of the exercise have been presented in Table 2.8.

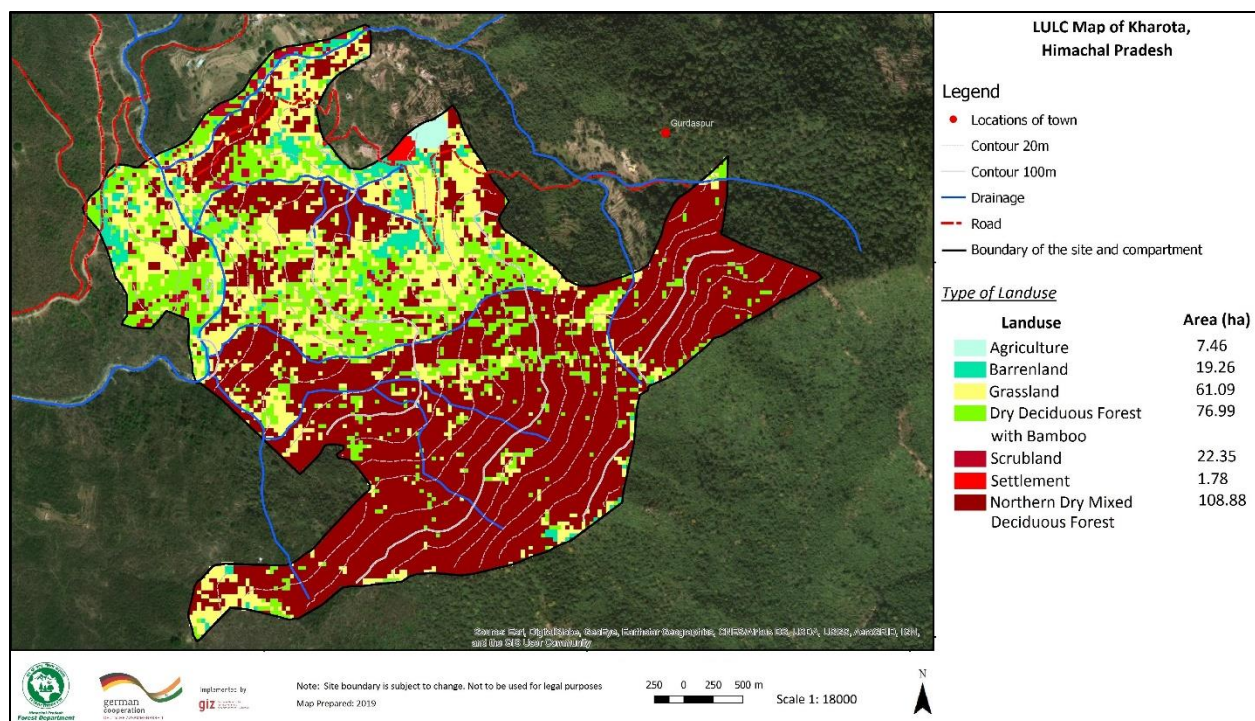
Table 2.8: Institutional Mapping of Kharota

Particulars / Item	Institutions							
	HPFD	Gram Panchayat Patta	Ward Member	Bamboo Contractors	RUCHI NGO	Agriculture Department	BDO Dharampur	Forest Guard
Importance	H	H	M	M	L	L	M	M
Relevance	H	L	M	M	L	M	L	H
Relation with VFMS Kharota	G	G	G	G	NA	G	NA	G
Conflict	None	None	None	None	None	None	None	None

Note: H: High, M: Moderate, L: Low, G; Good

2.2.6 Forest

The site consists basically of two forest types: Northern Dry Mixed Deciduous Forest and Dry Deciduous Forest with Bamboo (Map 2.2). A total of ten plots were laid in each forest type for the assessment of the human disturbance, tree species regeneration and basal area.



Map 2.2: Landuse/Landcover Map of Kharota

2.2.6.1 Forest Assessment During Baseline Survey

- Human disturbances in different forest types of Kharota

The dry deciduous forest with bamboo was found to have more human disturbances than the Northern Dry Mixed Deciduous Forest. In addition to fire, cutting and lopping was very high in the Dry deciduous forest with bamboo. Trampling was also found to be high that signifies heavy grazing in the forest. Table 2.9 shows percentage of plots having signs of human interference in each of the forest type.

Table 2.9: Ratio in % of Plots in which Signs of Human Interference were Observed in Kharota

Forest Type	Fire	Cutting	Trampling	Lopping	Resin	Track	Dung
5B/C2 Northern Dry Mixed Deciduous Forest	0	40	20	10	0	30	30
Dry Deciduous Forest with Bamboo	60	70	60	50	0	20	30

- Regeneration in different forest types of Kharota
 - Regeneration in 5B/C2 Northern Dry Mixed Deciduous Forest: In this forest type, a fair number of regenerating species were found. The number of seedlings per ha of *Cassia fistula* was found to be highest followed by *Flacourtia sapida* and *Mallotus phillipensis*. It was also found that the saplings were very less as compared to the number of seedlings regenerating. This difference clearly shows the effect of fire and grazing on the regeneration (Figure 2.3).
 - Regeneration in Dry Deciduous Forest with Bamboo: In this forest type, many species were found to be regenerating. The highest number of seedlings were found to be of *Mallotus phillipensis* followed by *Cassia fistula* and *Syzygium cumini*. This forest is affected by human disturbances such as fire and grazing which is evident from the fact that the number of saplings were very low as compared to number of seedlings (Figure 2.3).
- Basal area of trees in different forest types of Kharota
 - Basal area in Northern Dry Mixed Deciduous Forest: The basal area gives an insight about the number and size of the trees in an area. Although a good diversity of trees was found in this forest type but the basal area of *Anogeissus latifolia* and *Cassia fistula* was found to be the highest (Figure 2.3).
 - Basal area in Dry Deciduous Forest with Bamboo: This forest type had good diversity of tree species. However, the species having the highest basal area in this forest type was *Anogeissus latifolia* and *Lannea coromandelica* (Figure 2.3).

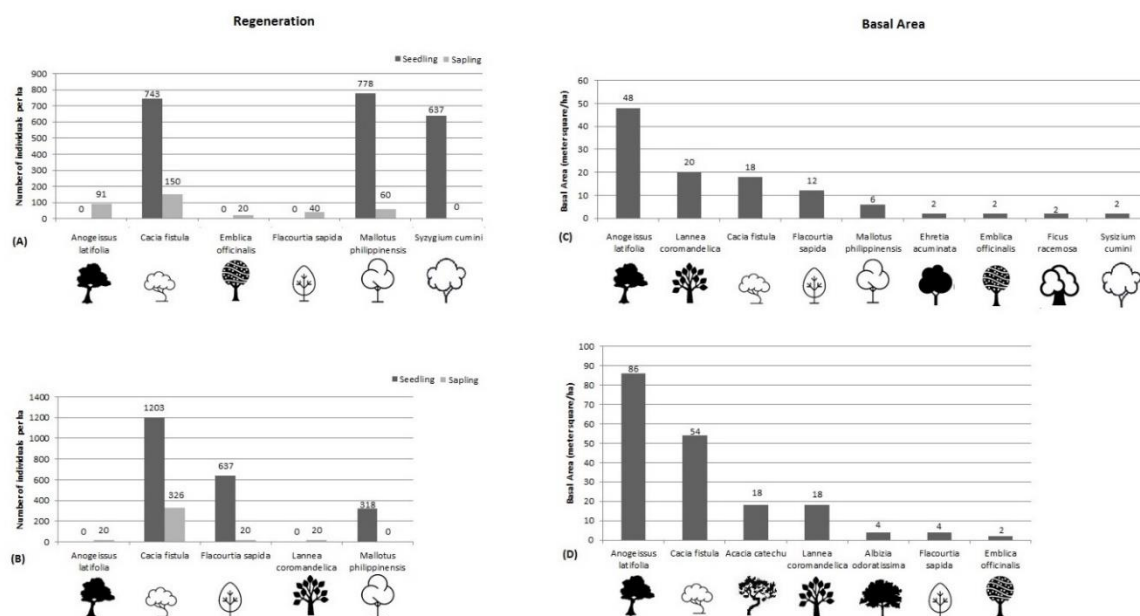


Figure 2.3: Regeneration in (A) Northern Dry Mixed Deciduous Forest (B) Dry Deciduous Forest with Bamboo and Basal Area in (C) Northern Dry Mixed Deciduous Forest (D) Dry Deciduous Forest with Bamboo

2.2.6.2 HPFD Documents like Divisional Working Plans and Compartment History Files

UPF Kharota lies near the border of the state boundary between Haryana and Himachal Pradesh. Forest fire causes extensive damage to vegetation. The fire line is not well maintained, and this allows fires starting in Haryana along the border to ravage Kharota forests also. This usually damages bamboo clumps. Even the bamboo workers cross over the state boundaries for harvesting bamboo.

Table 2.10: Description of Forest Kharota

Forest	Area in ha	Elevation (m)	Aspect	Slope	Rock & Soil	Description of Growing Stock
UPF Kharota U508	33.2	606 to 910	North West, West, South West	Moderate to Steep	<ul style="list-style-type: none"> • Sand Stone, Clay loamy of moderate depth • Humus fair in depressions at sheltered spots and poor on spurs 	<ul style="list-style-type: none"> • An average quality mixed deciduous forest of broad-leaved species with profuse stocks of bamboo in middle storey. • Bamboos are very thick in nallahs and depressions and moderate on spurs. • Chhal is the principle tree species followed by Jhingan, Khair, Amaltash, Amla, Dill, Dhak etc. • Northern portion measuring about 30 hectares above village Kharota is clear-felled where khair was planted with little success. • The underwood consists of <i>Carissa spinarum</i>, <i>Adhatoda vesica</i>, <i>Murraya koenigii</i>, <i>Flacourtia indica</i>. • Climbers are <i>Bauhinia vahlii</i>, <i>Pureria tuberosa</i>

Source: Compartment History File, HPFD

2.2.7 Assessment of Forest Ecosystem Service (FES)

During the baseline survey, a socio-economic survey was undertaken on the extent of usage of forest by the local communities of Kharota and adjoining villages. As per BS, the communities reside within forests or on its fringes and are dependent on the forest ecosystem for a variety of goods and services (Table 2.11). These include firewood for cooking, fodder (green leaves and grass) for livestock, Bamboo (for making baskets) and grazing of livestock in the forest, edible fruits, materials for agricultural implements and homestead constructions and water, which generate direct use value for the locals. Agriculture and bamboo are important sources of livelihood in the villages, dependent on forests for inputs such as small timber, leaf litter and services such as soil water regulation. The people in the village purchase the fodder from the market if fodder is not available. The average cost for purchasing the fodder is ₹ 18,781.

Table 2.11: Forest Ecosystem Services: its rank, trends and drivers

Category	Service	Rank	Sub-category	% HH using FES (Approx.)	Annual amount used		Quantity sufficient (Y/N)	Trend	Driver
					Total	Avg. no. of HH using FES			
Provisioning	Water	1	Availability of water for drinking and daily usage	100	NA	52	N (Water tankers needed in summer)	↓	Less rain, No desilting of ponds and water points in village and forest
	Fuelwood	2	Cooking	80	About 150 MT	41	N	↓	Old trees burnt in forest fire, lantana infestation
	Bamboo	3	Bamboo Products for Sale as Livelihood	50	About 50000 clumps per annum	25	N (Reduced this year; height of clumps decreasing)	↓	Less rain, forest fire, poor regeneration, wild animals eat new shoots
	Fodder	4	Green fodder	50	About 20 MT	20	N (Reduced highly in summer, Green Bamboo leaves and Chhal Tree)	↓	Lantana infestation, forest fires, old trees
	Stone	5	Home Construction	50	NA	25	Y	↓	Stone houses converted to brick houses

2.2.8 Human-Wildlife Conflict

Table 2.12 presents the output on prevalent human wildlife conflict in Kharota village. The data was collected during the PRA exercise. Wild boar was reported to be causing high damage to bamboo shoots and agricultural crops; blue bull, peacock, monkeys, porcupine were also causing damage to the crops.

Table 2.12: Human Wildlife Conflict: Type and Extent of Damage

Damages to	Wild animals causing damage						
	Wild boar	Blue bull	Peacock	Monkey	Porcupine	Stray Cattle	Leopard
Wheat	H	M	M	M	M	M	Killing of animals e.g. sheep, cow Goat & dog (1-2)
Maize	H	M	M	M	M	M	
Bamboo	H	M	Nil	M	M	Nil	
Coriander	H	M	M	M	M	M	

Note: H=High; M=Medium

2.2.9 Conflict Management

There was no conflict for fuelwood, timber distribution and fodder. A low intensity conflict was reported for bamboos with the Kharota farmers. Conflicts seen in Kharota is enlisted and presented in Table 2.13.

Table 2.13: Conflicts: Type and intensity in Kharota

Issues of Conflict	Conflict with	Intensity
Fuelwood	NIL	Nil
Timber Distribution	NIL	Nil
Fodder	NIL	Nil
Bamboos	Kharota farmers	Low

3 VFMS Kharota

VFMS Kharota (Table 3.1) is registered under the HP-PFM Rules of 2000 on 15 January 2019 with the objective of managing the UPF Kharota forest jointly with HPFD.

Table 3.1: List of Current Office Bearers of VFMS Kharota

S. No.	Designation	Name S/o, W/o, D/o	Address for correspondence and Mobile No.	Mobile No.
1	President	Balwinder Singh S/o Sh. Mast Ram	Vill. Thad, Kharota , PO Mandhala, Tehsil Baddi, Dist. Solan	9459299210
2	Vice-President	Yashoda Devi W/o Kanti Kuman	Vill. Kharota , PO Mandhala, Tehsil Baddi, Dist. Solan	9459138300
3	Member Secretary	Tek Chand S/o Sh. Chuhru Ram	Vill. Kukda Pani, Kharota , PO Mandhala, Tehsil Baddi, Dist. Solan	9459967408
4	Joint Secretary (Women)	Ratni Devi W/o Sh. Ram Singh	Vill. Thad, Kharota , PO Mandhala, Tehsil Baddi, Dist. Solan	9459913465
5	Treasurer- Ex Officio Member	Kartar Singh Negi S/o Sh. Lachh Ram Negi In Capacity as Deputy Ranger	Block Surajpur, Range Office Kuthar, Forest Division Kunihar, District Solan	9418362424
6	Executive Member	Sunita Devi W/o Sh.Kamal Chand	Vill. Kharota , PO Mandhala, Tehsil Baddi, Dist. Solan	9459626974
7	Executive Member	Krishna Devi W/o Sh. Amarjeet	Vill. Kharota , PO Mandhala, Tehsil Baddi, Dist. Solan	9459549078
8	Executive Member	Tara Devi W/o Sh. Surinder Kumar	Vill. Thad Kharota , PO Mandhala, Tehsil Baddi, Dist. Solan	8988974486
9	Executive Member	Sumitra W/o Sh. Tulsi Ram	Vill. Thad Kharota , PO Mandhala, Tehsil Baddi, Dist. Solan	8988993767
10	Ex Officio member- Ward Panch	Changa Ram S/o Sh. Tula Ram as Ward Member Kharota, Gram Panchayat Patta Nali	Vill. Kharota , PO Mandhala, Tehsil Baddi, Dist. Solan	9459666364
11	Ex Officio Member- Forest Guard	Shubham Sharma S/o Sh. Suresh Kumar Sharma In Capacity as Forest Guard Kharota Beat	Block Surajpur, Range Office Kuthar, Forest Division Kunihar, District Solan	8994071779

S. No.	Designation	Name S/o, W/o, D/o	Address for correspondence and Mobile No.	Mobile No.
12	Member Self Help Group	Kaushalya Devi W/o Sh. Kaku Ram	Vill. Thad Kharota , PO Mandhala, Tehsil Baddi, Dist. Solan	9459929727
13	Member Women Group	Hem Lata W/o Sh. Sohan Lal	Vill. Kukda Pani, Kharota , PO Mandhala, Tehsil Baddi, Dist. Solan	7833833697
14	Member Women Group	Khimmi Devi W/o Sh. Jaipal	Vill. Kukda Pani, Kharota , PO Mandhala, Tehsil Baddi, Dist. Solan	9459506353

4 Aims of the Management Plan

The assessment for FES was done in consultation with all stakeholders during the PRA exercise clearly defined the objectives for long (30 years), mid (15 years) and short-term (5 years) plan for its management (Table 4.1). The long-term and short-term planning sets the context for the orientation of this microplan and determines the measures suggested. Therefore, a five-year period is covered under the microplan of which the first section is undertaken by the HP-FES.

Table 4.1: Management Plan based on PRA at Kharota

Type of Plan	Soil & Water	Fuel & Fodder	Forest	Measures
Long Term (30 years)	Water availability is maintained despite climatic vagaries.	<ul style="list-style-type: none"> Fuel and fodder supply meet the demand of Kharota 	<ul style="list-style-type: none"> Kharota forest is sustainable model with respect to bamboo management. Its benefits are shared under PFM Rules of the Government of Himachal Pradesh. Benefits from bamboo harvest comprise a significant share of cash income for VFMS member families; Lantana is considerably reduced and has become insignificant in areas under plantation. An effective community-based fire management system is in place 	<ul style="list-style-type: none"> VFMS ensures equitable usufruct sharing for members. VFMS regulates use of forest for grazing and lopping and protection against fire, illicit felling, etc. VFMS is strengthened and becomes important in planning and management of Kharota forest

Type of Plan	Soil & Water	Fuel & Fodder	Forest	Measures
Mid Term (15 years)	<ul style="list-style-type: none"> • Increased flow of water in springs. • The Project Site becoming self-sufficient for water with no requirement for tankers during summer season 	<ul style="list-style-type: none"> • Regenerated areas have attained pole stage forest with moderate density. • Increased percentage of fodder plant composition which fulfills considerable fodder demands • Dense canopy cover helps suppression of <i>lantana</i> resulting in more grass availability 	Bamboo is managed for suppressing <i>Lantana</i> with more natural regeneration of bamboo.	<ul style="list-style-type: none"> • VFMS strictly protects plantation against lopping/illicit cutting; • Review of FES agreement for rational enhancement of protection incentives • Fire lines maintained with the support of HPFD
Short Term (5 years)	<ul style="list-style-type: none"> • Significant increase in water availability in water bodies. • Scaling up of activities of soil and water conservation from other programs or schemes of Government. • Communities get good experience in planning for soil and water conservation activities 	<ul style="list-style-type: none"> • Treated areas have well grown sapling stage plantations with 90% survival • Understorey of <i>Lantana</i> is suppressed to half of its current intensity 	<ul style="list-style-type: none"> • Bamboo plantations are protected and fully established. • Harvesting of bamboo provides significant cash for managing the bamboo plantations and profits are shared by community as per PFM rules 	<ul style="list-style-type: none"> • Effective protection of forest as well as plantation work is carried out by VFMS. • Conflicts in usufruct sharing are resolved by VFMS • VFMS is enabled to get funds from other donors /development agencies

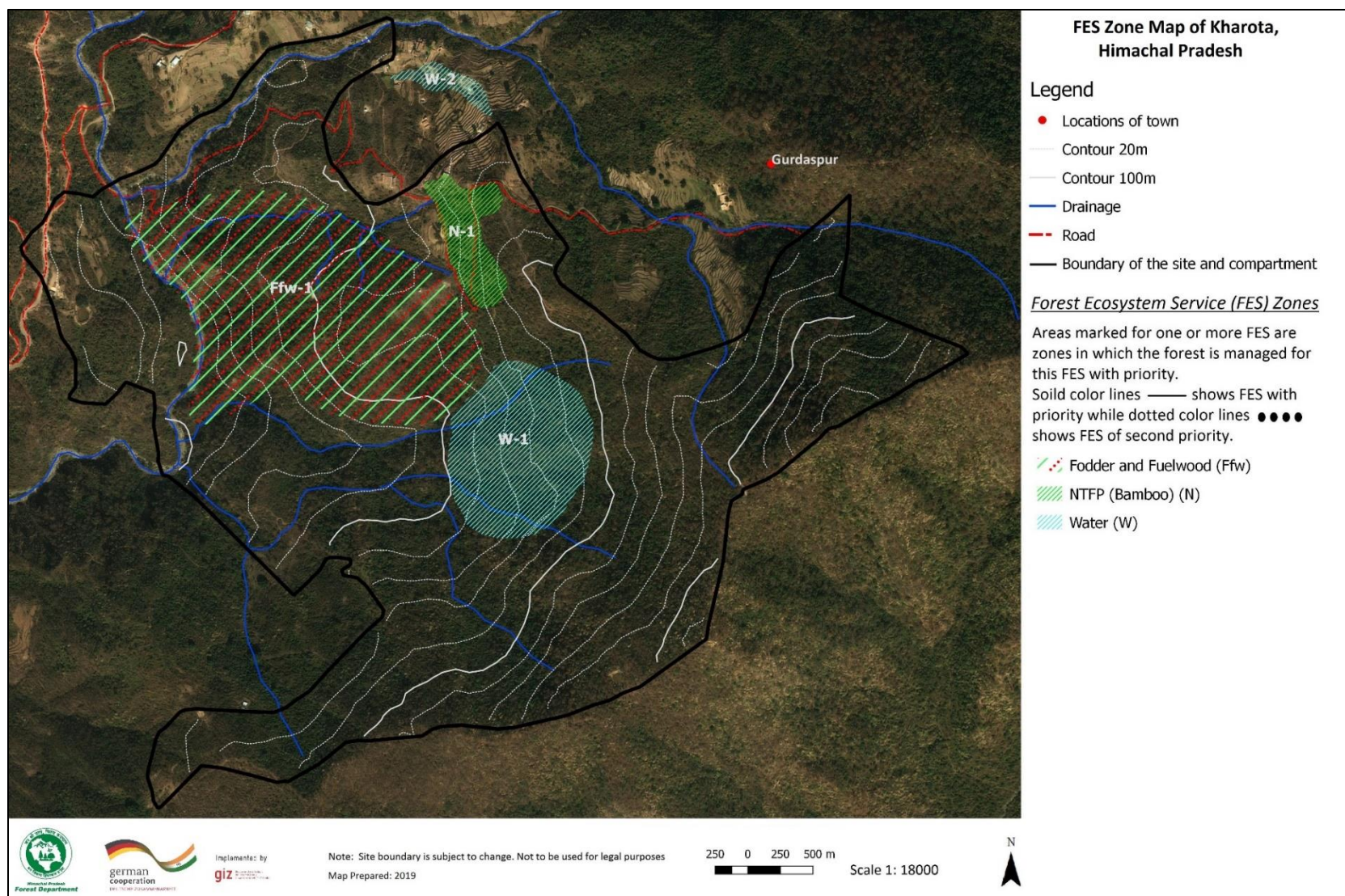
Type of Plan	Soil & Water	Fuel & Fodder	Forest	Measures
HP-FES Project Period (first 2 years of 5-year period)	<ul style="list-style-type: none"> • Soil and water conservation related activities are planned and implemented. • Baseline information is set up and systems for measuring springs / rivulets, pond water flows are in place. 	<ul style="list-style-type: none"> • Plantation of multi-purpose fodder yielding broad leaf tree spp. are carried out. • Survival percentage up to 80 percent (of the same) is ensured • VFMS ensures protection of plantation against grazing and fire. 	<ul style="list-style-type: none"> • Fire line is managed. Planted areas are protected • VFMS members are motivated to be actively involved in forest protection and management. 	<ul style="list-style-type: none"> • Degraded and denuded areas are brought under regeneration and plantation • Rules for protection and usufruct sharing are framed and followed and VFMS strengthened. • Soil and water conservation measures are planned and implemented

5 The Plan (for 5 years)

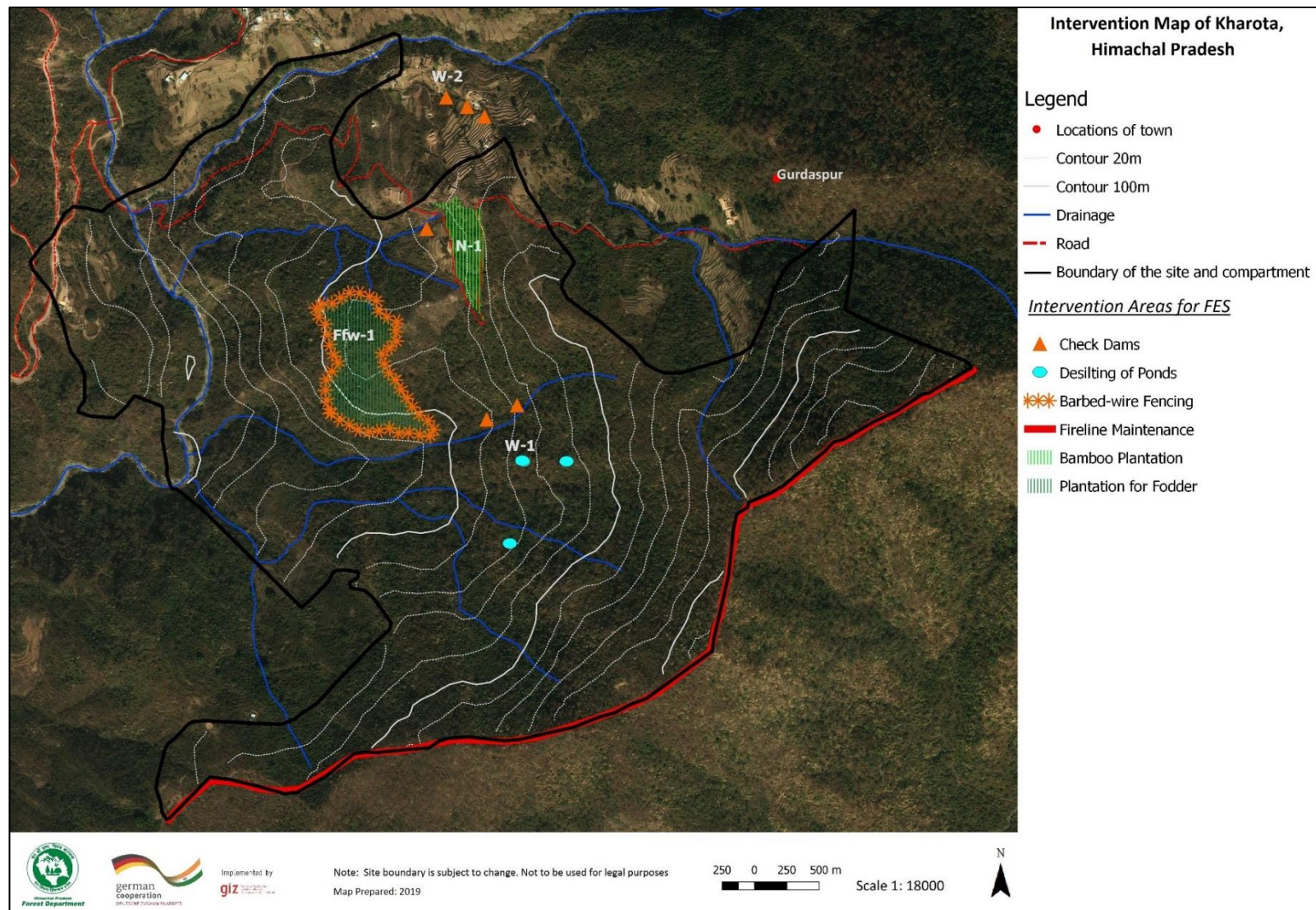
Table 5.1: Zone-wise Management Plan of Kharota Demonstration Site

FES Zone	Priority FES*	Area (Ha)	Compartment Number	Description	Interventions
Water and Soil Conservation	<u>W-1</u>	-	UPF Kharota	<ul style="list-style-type: none"> The forest has a net area of 33.20 ha. The elevation varies from 605 to 910 m. It has a moderate to steep slope. Soil type is clayey loam with moderately deep to very deep depth. It is a mixed deciduous forest of broad-leaved species with profuse stocking of bamboos in the middle storey. Bamboos are thick in nals and depressions and moderate on spurs. Main tree species include Khair (<i>Acacia catechu</i>), Amaltas (<i>Cacia fistula</i>), Aonla (<i>Embllica officinalis</i>), Jhingan (<i>Lannea grandis</i>), Bel (<i>Aegle marmelos</i>), Dhak (<i>Butea monosperma</i>). The understorey comprises of shrubs like <i>Carrisa</i> spp., <i>Adhatoda vasica</i>, <i>Murraya koenigii</i>, <i>Dodonia viscosa</i> and <i>Euphorbia royleana</i> 	<ul style="list-style-type: none"> Dry masonry check dams Desilting of ponds Measures employed to stop open grazing
Water and Soil Conservation	<u>W-2</u>	-			<ul style="list-style-type: none"> Dry masonry check dams Measures employed to stop open grazing
Fodder & Fuelwood	<u>Ffw-1</u>	3			<ul style="list-style-type: none"> Plantation of broad leaf fodder species like Ban oak, <i>Robinia</i>, Bihul and Kachnar Removal of lantana from plot Barbed wire fencing to check grazing
NTFPs	<u>N-1</u>	1			<ul style="list-style-type: none"> Plantation of bamboo (<i>Dendrocalamus strictus</i>) Enumeration of existing bamboo clumps in the plot and recording them Benefit sharing as per PFM Rules
Fire management	-	-			<ul style="list-style-type: none"> Maintenance of fire lines by clearing of weeds and cutting of shrubs

* Solid colour lines show the priority FES while the dotted colour lines show the FES of second priority. The combination of two lines shows that the zone has two FES, with different priorities



Map 5.1: FES Zone Map of Kharota



Map 5.2: Intervention Map of Kharota based on 5-year time plan

5.1 FES: Increase of Water Supply and Decrease in Water Runoff Speed

Target: Improved hydrological function

Table 5.2: Activity Plan for Enhancing Water Infiltration & Soil and Erosion Control

FES	C. No.	Activities	First Year (in ₹)	Second Year	Third Year	Fourth Year	Fifth Year	Total (in ₹)
W-1 and W-2	UPF Kharota	Check dam (six) in Dry cement masonry and materials	4,18,746	-	-	-	-	4,18,746
		Desilting of ponds (six)	90,000	-	-	-	-	90,000

5.2 FES: Fuelwood and Fodder Improvement

Target: Increase in Fuelwood and Fodder Availability

Table 5.3: Activity Plan for Forest Enrichment Plantation of Broad-leaved Species Yielding Lopped Fodder

FES	C. No.	Activities	First Year (in ₹)	Second Year	Third Year	Fourth Year	Fifth Year	Total (in ₹)
Ffw-1	UPF Kharota	Forest enrichment plantation of broadleaved species yielding lopped fodder with barbed wire fencing	4,42,800	-	-	-	-	4,42,800
N-1		Forest enrichment plantation of Bamboo species for livelihood						

5.3 FES: Bamboo availability

Target: Increase in the Quality and Quantity of Bamboo.

Table 5.2 Provides the Details of Activity and Budget Allocation for Bamboo Plantation

5.4 Fire Management

Table 5.4: Fire Line Maintenance

FES	C. No.	Activities	First Year (in ₹)	Second Year	Third Year	Fourth Year	Fifth Year	Total (in ₹)
-	UPF Kharota	5 km Fireline Maintenance	60,000	-	-	-	-	60,000

In addition to management of fire line, training on fire management as well as tools for fire management will also be provided to communities. Both these activities have been provided for in the microplan.

5.5 FES: Fodder

Measures for management of forest for fodder in Kharota are:

1. The area under bamboo management will be harvested only on a three-year rotation cycle;
2. Lopping will be undertaken selectively on 3-year rotational basis in areas earmarked for water conservation.
3. No leaf litter to be extracted from the areas earmarked for water conservation.
4. Communities will be encouraged to make rules for the management of bamboo forests.
5. Fast growing fodder tree species like *Robinia*, *Celtis*, *Bauhinia*, *Morus* will be interplanted to meet the deficit in fodder demand.
6. Community members will be encouraged to plant multi-purpose fodder tree species on their land.
7. Provision for the introduction of high yielding tall fodder plants should be given.

5.6 Water Conservation

Measures for water conservation in Kharota UPF were identified as:

1. Complete ban on grazing in areas earmarked for water conservation. VFMS to make rules needed to ensure zero grazing in areas identified for water management.
2. Lopping will be undertaken selectively on 3-year rotational basis in area earmarked for water conservation.
3. No leaf litter to be extracted from areas earmarked for water conservation.
4. Plantation of bamboo and fast-growing broad leaf species to improve the density of trees.
5. Plantation of bamboo along rivulets to check soil erosion.
6. Desilting of existing ponds to improve recharge

5.7 Bamboo Management and Benefit sharing under PFM Rules of 2001 of Government of Himachal Pradesh

Bamboos are fast growing species and are ready for harvesting in four to five years. This provides good income to communities. To operationalize the benefit sharing as under PFM rules, a case of management of bamboo by the community must be clearly documented. For this, the following steps have been identified.

1. Identification and recording of area, demarcation and enumeration of existing stumps of bamboos.
2. The society in the presence of an authorized HPFD official will undertake the process as mentioned in Step 1.
3. The plan for management including the monitoring plan will be submitted to the DFO's Office for approval. An MoU will be signed between DFO Kunihar and the Society which will enlist the conditions of use of proceeds from harvesting of bamboo culms.
4. The representative of the society will be present at the time of marking of bamboo culms/plot for felling.
5. The society will be entitled for proceeds of sale from harvest of Bamboo culms that have been planted and managed under the HPFES project (and not the previously existing/planted clumps).
6. The amount will be transferred to the account of the society and will be used strictly as per the PFM Rules, 2001 of Government of Himachal Pradesh.

5.8 Fire Management

The following measures for fire management were identified

1. Training for community on fire management
2. Provision of basic tools/implements to VFMS members
3. Incentive mechanism to society for fire protection
4. Identifying fire corridors and setting up of fire lines in those areas under the project
5. VFMS to maintain fire lines with support of HPFD
6. Provision in VFMS to make rules for imposing fines on people responsible for fire

6 Monitoring and Evaluation Framework (M&E)

A participatory framework will be set up to monitor the activities and process of participation of stakeholders in the implementation of the microplan. The impact of activities on the flow of ecosystem service and related forest management goals will be monitored. To effectively monitor the project impacts, the baseline data corresponding to activities needs to be collected. The M&E framework should clearly mention agreed protocol on rights and responsibilities of all stakeholder groups.

The framework for monitoring of microplan will be segregated in two sections:

a) M&E undertaken by HPFD

In-house monitoring of activities against physical and financial indicators as per a pre-defined timeline will be undertaken by the HPFD frontline staff. The work done will also be subjected to the monitoring framework used by the HPFD. This system will evaluate vegetation and other related ecosystem service flow over a period. Use of GIS-based map of JFM areas, with clearly delineated village boundaries will be undertaken by HPFD.

b) Participatory Monitoring by VFMS

This will be done by a group of individuals including a local forest guard of the beat; one member of the VFMS nominated by executive committee of VFMS; and the president of the local Mahila Mandal. This group will provide report against indicators after ground verification for various activities undertaken in the field.

After every 2 years, improvement in livelihood will be assessed through socio-economic survey.

6.1 Baselines Data

A baseline will be set to measure the flow of existing FES from the project area. For this, quantitative data will be collected using socio-economic surveys, field exercises and observations together with the community. In addition to this, photo-documentation of works will be done at different stages of works.

6.2 Monitoring Plan

Once the microplan is approved and cost of work finalised, an elaborate monitoring plan will be prepared and appended to the microplan. The plan will consist of clearly defined activities, its timelines, indicators, means of verification of indicators and the responsible parties in charge of gathering this data. The communities and frontline HPFD staff will be trained in monitoring of works and processes under the framework of microplan.

Table 6.1 gives a tentative plan for Monitoring of Kharota Microplan

Table 6.1: Monitoring and Evaluation Plan with Indicators

S. No	FES	Measures to be Monitored	Baseline value	Target value	Indicator	Means of verification	Responsibility
1	Increase of Water Supply & Decrease in Water Runoff Speed	M1: 1. Flow of water in sources in dry seasons of the year; April to mid-June & Oct to mid-Dec 2. Measurement of runoff from the forest during the rainy season. 3. Grazing to be stopped in zones identified for water	X Litre/Sec water flow in water spring sources Measure silt load during peak season X number of sheep/goats currently grazing in the forest area identified for water management	Increase of 0.1 litre / sec. in water flow in water sources in Project period. Ban grazing	<ul style="list-style-type: none"> Reduction in silt load in the Run off in Nalas originating from forest during rainy season. Increase in flow of water in water sources like ponds during Oct –Dec and April – June. 	Record keeping by Participatory Monitoring Unit	Participatory Monitoring unit (part of VFMS unit)
2	Fuelwood & Fodder Improvement	M2: Enrichment plantation of Broad-leaved species yielding fodder& grass % survival	About 35% proportions of fodder supply is from forest	5% increase in current supply of fodder from forest	Quantity/ headloads more fodder from forest trees under rotational lopping; Quantity/headloads more grass cut from forest planted / sown with broadleaved species/ grass slips	Record keeping/Survey	VFMS
3	Bamboo Availability	M3: Enrichment plantation of Bamboo species	About 55% is the proportions of	25 % increase in current supply	More stumps of Bamboo from forest	Record keeping/Survey	VFMS and HPFD

S. No	FES	Measures to be Monitored	Baseline value	Target value	Indicator	Means of verification	Responsibility
		yielding Bamboo for livelihood	Bamboo supply from forest	proportion of Bamboo from forest	trees under rotational lopping		
4	Fire Management	M4: Fireline Maintenance and no instance of forest fires Protection of plantations from fire	100 % area affected by forest fires	Reduce to less than 20 % the area affected by forest fires	Reduction in the fire instances reported and areas affected by forest fire	Record keeping/Survey	VFMS and HPFD

7 Recommendations

The activities in the microplan will support the communities by preventing collapse of the existing systems of rural economy. This will be achieved by improving the situation of soil and water conservation, fodder, and fuel availability, especially the three main FES as prioritized by the community.

The forest has witnessed frequent fires which could be attributed to increase in *Lantana*. The local capacity to eradicate the area off *Lantana* and fight forest fires should be enhanced. Training, along with equipments to do it, especially on Cut Roots Stock (CRS) method could be provided to VFMS. Training in forest fire fighting and providing of tools to VFMS equipping the community to fight fire should be done before the start of the fire season.

The residents of Thad village are heavily dependent on bamboo which is used for basket making. A value chain analysis of the bamboo craft needs to be taken up and the capacity of artisans built for new bamboo products. This could cater to the outside market and get greater returns from the harvested bamboo.

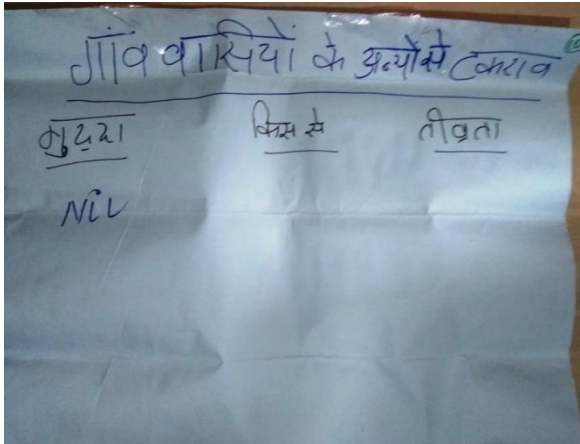
The technical and operational capacity of VFMS should also be improved. VFMS needs to be equipped with computer and printer with completed inventory for any office for its proper functioning. The members of VFMS should be given exposure to other VFMS and their mode of functioning.

8 Annexures

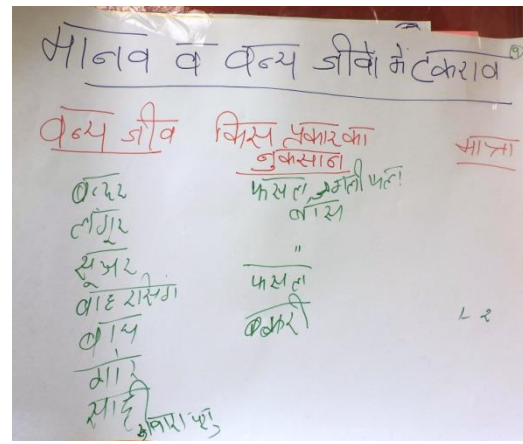
Annexure I: Consolidated Budget Plan

S. No.	FES	Aim	Activities	First Year (in ₹)	Second Year	Third Year	Fourth Year	Fifth Year	Source of Finance
1	Increase of water supply and Decrease in water runoff speed	Enhancing percolation of water into ground/soil: Erosion control	Check dam (six) in Dry cement masonry and materials	4,18,746	-	-	-	-	HPFES
			Desilting of ponds (six)	90,000	-	-	-	-	HPFES
2	Fuelwood and Fodder Improvement	Increase in fuelwood and fodder availability	Forest enrichment plantation of broadleaved species which yields fodder for lopping (Area = 3 ha)	4,42,800	Planting and nursery	1 st Maintenance	2 nd Maintenance	3 rd Maintenance	HPFES
3	Bamboo availability	Increase in the quantity and quality of fodder	Forest enrichment plantation of Bamboo yielding species for		Planting and nursery	1 st Maintenance	2 nd Maintenance	3 rd Maintenance	HPFES

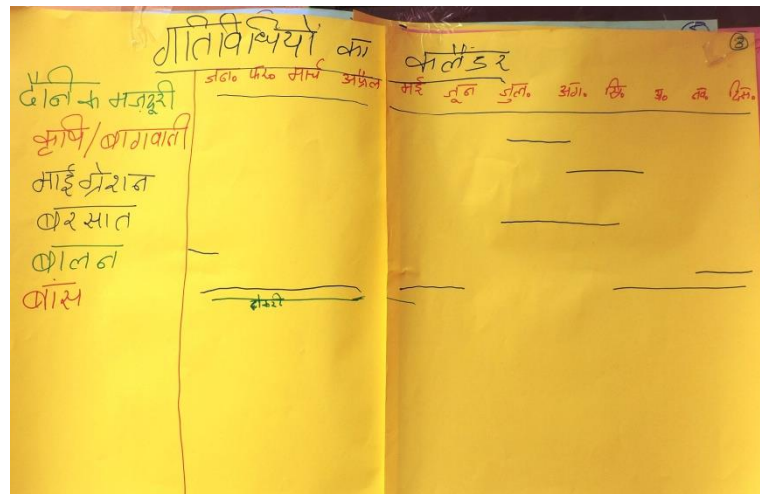
S. No.	FES	Aim	Activities	First Year (in ₹)	Second Year	Third Year	Fourth Year	Fifth Year	Source of Finance
			livelihood (Area = 1 ha)						
4	Fire Management	Protection of forest from fires	Fire line (5 km) maintenance	60,000	-	-	-	-	HPFES
Contingencies				64,454	-	-	-	-	HPFES
Grand Total				10,80,000					



Conflict Management



Human-Wildlife Conflict



Seasonality of Labour Distribution

Annexure III: Society Registration Certificate

Registration No :		 HPCD-544
<h2>Certificate of Registration of Societies</h2>		
		
<h3>Himachal Pradesh Societies Registration Act 2006 (Act No. 25 of 2006)</h3>		
<p>This is certified that the Thad Kharota Village Forest Management Society located at C/o Sh. Balwinder Singh, Village Thad Kharota, Post Office Mandhala, Tehsil Baddi, District Solan, Himachal Pradesh Pin 174103 has been registered under the provisions of the Himachal Pradesh Societies Registration Act, 2006 (Act No. 25 of 2006) on the 15th day of January 2019 (15/01/2019).</p>		
<p>Given under my hand and seal at SDM Office, Nalagarh, Himachal Pradesh.</p>		
	<p> Deputy Registrar of Societies Nalagarh, Dist. Solan (H.P.) SDM -cum- Deputy Registrar of Societies Nalagarh, Dist. Solan (H.P.) Himachal Pradesh</p>	

Annexure IV: Memorandum of Understanding/Memorandum of Agreement (MoU/MoA)

An MoU must be signed with stakeholders, primarily between forest department and the community. It mentions the rights and responsibilities of various stakeholders and their roles with respect to protection and regeneration work. It also indicates benefit sharing on the principles of transparency, trust, empowerment and accountability.

MoU should clearly:

- Mention short and long-term, roles and responsibilities, powers, implementation plan, sharing usufructs, and conflict resolution;
- Take care of local needs;
- Indicate a restoration plan;
- Emphasize transparent accounting of seasonal, annual and periodical produce;
- Mention financial accountability and distribution of sharing mechanism including flow to central funds for restoration; and
- Indicate specific roles on boundary demarcation, fire prevention, grazing, encroachment, and illicit felling, non-destructive NTFP harvesting.

HIMACHAL PRADESH FOREST ECOSYSTEM SERVICES (HP-FES) PROJECT

Memorandum of Understanding

between

The Thad Kharota Village Forest Management Society

and

the Himachal Pradesh Forest Department
for Village Forest Management.

Whereas

The **Thad Kharota Village Forest Management Society** (hereinafter called "Society") has been constituted as per procedure described in the HP PFM Regulations notified by Govt. of HP vide No. No FFE-C (9). 112001 dated 23.8.2001, registered under the Himachal Pradesh Societies Registration Act, 2006 by the villagers of Thad, Kharota and Kukdapani under Forest Division Kunihar in the district Solan of Himachal Pradesh and has an elected Executive Committee (hereinafter called "EC") to implement the Micro Plan for Forest Management and (hereinafter called "Plan") for protection, rehabilitation and management of the specified forest areas that has been prepared by the Society and the Kunihar Forest Division; the Plan contains details of activities to be undertaken for management and development of forest areas using a Forest Ecosystem Services (FES) approach and also description of equitable distribution of products and services obtained from the allocated forest areas and public resources of the village; the Plan has been approved by the Officer in Charge of the Forest Division (hereinafter called "Forest Officer") on behalf of the Government of Himachal Pradesh;

Now herewith

The DFO, Kunihar Forest Division and the Society have mutually agreed on this MoU, and consequently, this MoU is executed with the following articles:

1. Purpose of the Memorandum of Understanding

This Memorandum of Understanding (hereinafter called "MoU") details the responsibilities of the Society regarding management and protection of forest area(s) and village(s) resource development, in the manner specified in the Plan and for equitable distribution of benefits amongst its members/ working groups in the manner specified in the Plan. It further entails payments and support to be provided by the project (HP-FES) and other associated conditions.



2. Responsibilities of the Society

With regard to its Constitution, working, powers, duties and benefits, the Society agrees to act in accordance with the HP Government Notification No. Fts. II (B) 15.10.87 dated 23.08.2001 and other relevant Government orders and instructions.

- 2.1 The Society agrees to provide all necessary assistance to the Forest Officer in selection of intervention area(s) to be allotted to it for forest management so that there is no dispute regarding areas of common use of nearby villages.
- 2.2 The Society, pursuant to the approval of Micro plan by the DFO agrees to develop a 6-month (Activity & Budget) Plan, get it approved by the General House of the Society, and submit to the Forest Officer for release of funds.
- 2.3 The Society agrees to carry out works laid out in the Plan for the forest area as per the approved schedule of rates of work and labour and in doing so, follow the principles of management of forest and wildlife specified therein, also taking into account the guidelines of the Government, prevalent legal provisions and technical principles. The Society will ensure that no existing acts/ rules of forest/ wildlife management are being violated.
- 2.4 The Society agrees to contribute to the cost of works proposed through a 10% cash/ kind contribution of total investment, to be collected by the VFMS from its members/ User Groups and deposited in the SB Account held by it. The amount of contribution so deposited by the VFMS will be returned along with interest accrued to the VFMS at the end of the project period and the VFMS will be free to spend the amount as jointly decided by them. This community contribution is to be made within 6 (six) months of the commencement of the Plan.
- 2.5 The Society agrees, after completion of the related works, to protect the forest area from fire, grazing, illicit felling, illicit transport, illicit mining, encroachments and poaching and shall help the forest department in this regard.
- 2.6 The Society agrees to pass the information regarding person(s) engaged in harming the wild animals and forests or those engaged in illegal activities on to the Forest Department. The Society agrees to help forest employees in apprehending such person(s) and provide all possible assistance in protecting any seized produce etc.
- 2.7 The Society agrees to rectify any shortcomings found during review of its works by the Forest Officer/ Monitoring Agency.
- 2.8 The Society agrees to keep accounts of income and expenditure of the funds from various sources, present it to the Forest Officer or his representative when required, and to get regular annual audits done by the agency assigned by the Forest Officer.
- 2.9 The Society agrees to maintain the records specified by the Forest Officer regularly and in prescribed formats.
- 2.10 The Society agrees that the distribution of products and services generated as a result of implementation of the Plan among its members/User Groups is done in an equitable manner. If the Forest Officer points out any mismanagement or irregularity in the



equitable distribution of such products and services, then the Society agrees to implement the necessary corrections/ improvements suggested by the Forest Officer.

- 2.11 The society agrees to ensure that there is no misuse of funds allocated from the Forest Department for implementation of the activities under this project.

3. Responsibilities of the Forest Department

- 3.1 The Forest Department will provide to the Society the related input materials required to carry out the works specified in the Plan, such as saplings, fencing materials, etc. in a timely manner.
- 3.2 The Forest Department will provide the funds specified in the Plan to the Society for implementation of works carried out in the forest area on the basis of the Plan in a timely manner. Subsequent to approval of the Plan, a 6-month (Activity & Budget) Plan will be developed by the VFMS and got approved by the General House. After acceptance of this 6-month plan, the DFO will transfer the budgeted amount into the general account of the VFMS prior to commencement of works.
- 3.3 Funds from other department's schemes as the Panchayat may be able to converge/ garner, may also be used for activities that help meet the project's objectives.
- 3.4 The Forest Department shall provide the necessary advice and guidance to the Society for implementation of works carried out in the forest area on the basis of the Plan.
- 3.5 The Forest Department shall NOT be responsible for any loss in any of the works related to implementation of the Plan and no claim of any sort can be presented against Forest Department.
- 3.6 In the event of any misutilization of the funds at the level of the VFMS, the Forest Department shall initiate proper legal action against the former.

4. Support by the Project

- 4.1 The Project (HP-FES) will provide to the DFO the funds (after signing the Financing Agreement with GIZ) for specified activities in the approved Plan for implementation of works carried out in the forest area (s). These funds will be disbursed by the DFO to the Society considering the 6-month plan submitted by the Society.
- 4.2 The Project (HP-FES) will provide training and other capacity building measures to the Society members, as well as support for income generating activities as specified in the approved Plan.
- 4.3 The funds earmarked for plantations, fencing etc. (mentioned in the approved Plan) will be credited into the general bank account with the VFMS as per accepted 6-month plans derived from the Plan.
- 4.4 Payment and receipt of funds will be strictly by means of cheques or bank transfers to the account of the Society. All disbursements by the Society to VFMS members will also be executed through bank transfers.


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5. Rights and Benefit Sharing

- 5.1 The Rights of right holders as admitted in the Forest Settlement will remain unaffected due to constitution of the Society and will continue to be exercised as such.
- 5.2 The Benefits which the Society members and their User Groups will be entitled to after closure of plots/ patches in the forest for various project interventions are as follows:
 - 5.2.1 Group members responsible for protection and maintenance of different closed patches will harvest and share among themselves grass and fodder from those patches;
 - 5.2.2 Group members responsible for nurturing and protecting fodder/ firewood lots raised by them will be entitled to collect fodder/ firewood from these lots and share it amongst themselves equitably;
 - 5.2.3 Grass and hay production areas will be harvested and shared amongst the groups/ villagers as decided by the EC or in rotation;
- 5.3 The Society will be entitled to sale proceeds of all intermediate and final harvest of NTFPs, as laid out in the PFM Regulations of HP, 2001.

6. Monitoring & Evaluation

- 6.1 Monitoring and Evaluation of project activities will be done at different levels, including by the EC, a monitoring committee, the Forest Officer or his representative, and an independent third party.
- 6.2 The EC or any of its members will monitor progress and quality of work during execution of various works. The Member Secretary will record the date, places and names of EC members who checked the work(s) and whether works were satisfactory and any instructions given.
- 6.3 A participatory monitoring committee made up of members of the Society, a member from Panchayat as well as a representative from the Forest Department (e.g. Deputy Range Officer) will on quarterly basis review objectives, inputs and work progress and report to the whole Society. Their reports will then be sent to the Forest Officer for information.
- 6.4 Where Society groups have carried out or are responsible for activities like fencing, plantations and maintenance of plantations (all the works according to the Plan), annual monitoring will be carried out by Project-approved monitors (Third Party) and the results of this monitoring will determine the quantum of release of incentive payments as per the norms/scheme agreed upon in the approved Saving Book Approach Guidelines.
- 6.5 Settlement of Disputes: Settlement of disputes and conflict resolution will be governed as laid out under section 49 & 50 of the Bye Laws of Society.



7. Memorandum of Understanding

We are aware that the terms of this agreement will be valid and benefits mentioned in this agreement shall be available to the Society only when it discharges its duties, responsibilities and works in a satisfactory manner and this is certified by the Forest Officer every year. However, if the Forest Officer fails to fulfill conditions mentioned in para 3 and 4 of this agreement and there is a cause for the Committee not able to discharge its responsibilities and works, the same will be kept in mind while evaluating the works of the Committee every year.

I, President, Village Forest Management Society, declare on behalf of the Society, that I am committed to follow all the conditions mentioned in this MoU and am signing this memo after reading/understanding all conditions mentioned herein, literally and in their original meaning.

(Name, Seal and Signature of the President, VFMS) On behalf of VFMS Thad Kharota
VFMS

14/2/19
Satyan Chauhan

Witness

1. SATYAN CHAUHAN, Advisor - Forestry
GIZ - HPFES

Satyan Chauhan
14th Feb, 2019

2. Rajinder Kumar, Sr Asst of DFO Kunihar.

14/2/19

I, DFO Kunihar [position] undertake, on behalf of -H.P. Forest Department, to implement all duties/responsibilities of the Forest Department mentioned in this memorandum.

(Name, Seal and Signature of the Divisional Forest Officer) On behalf of Forest Department

14/2/19
Divisional Forest Officer,
Kunihar Forest Division,
KUNI HAR (H.P.)

Satyan Chauhan

**Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH**

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Himachal Pradesh (India)

For further Information
Principal Chief Conservator of Forest, Forest Department,
Himachal Pradesh, Talland, Shimla- 171001, India