



Kharota Concise Micro Plan

Himachal Pradesh Forest Ecosystem Services
(HP-FES) Project



Ministry of Environment, Forest
and Climate Change



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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.

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Micro plan for Kharota

Himachal Pradesh Forest Ecosystem Services
(HP-FES) Project

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CHAPTER- 1

Introduction

Forest Ecosystem Services Approach

Forests provide people with numerous services and goods like fuelwood, timber, fodder, fruits etc. They also regulate abundant aspects of the environment like water, air purity and micro climate which benefit people in many ways. These goods and services are together termed as “Ecosystem Services”.

The ecosystem services derived from forests are referred to as “Forest Ecosystem Services” (FES). The FES approach states that forests are managed to produce services required for human well-being.

As demands and importance for these services differ much within society, a key element of the FES approach is to manage forests that enable a supply of FES prioritised by stakeholders, giving due importance to the remaining goods and services.



HP-FES Project Background

The Indian and German Governments are working together in many areas that are important for our society. GIZ, in collaboration with the Himachal Pradesh Forest Department (HPFD), is implementing the Himachal Pradesh Forest Ecosystem Services (HP-FES) Project on behalf of BMZ (GIZ's commissioning party). The HP-FES project aims at integrating the Forest Ecosystem Services (FES) approach into the state's forest management.

Important stakeholders are consulted to identify the set of ecosystem services for which the forest is managed. Together with them, the FES that are derived from the forest are listed and prioritised. Based on this, a management plan like this one is developed.

CHAPTER- 2

Kharota 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. Soil and Water:

- a. Water availability is maintained despite climatic vagaries.

2. Fuel and Fodder:

- a. Fuel and fodder supply meet the demand of Kharota

3. Forest:

- a. Kharota forest is sustainable model with respect to bamboo management.
- b. Its benefits are shared under PFM (Participatory Forest Management) rules of the Government of Himachal Pradesh.
- c. Benefits from bamboo harvest comprise a significant share of cash income for VFMS (Village Forest Management Society) member families.
- d. Lantana is considerably reduced and has become insignificant in areas under plantation.
- e. An effective community-based fire management system is in place

Measures:

- a. VFMS ensures equitable usufruct sharing for members.
- b. VFMS regulates use of forest for grazing and lopping and protection against fire, illicit felling, etc.
- c. VFMS is strengthened and becomes important in planning and management of Kharota forest.

Mid Term Vision (15 years)

1. Soil and Water:

- a. Increased flow of water in springs
- b. The Project Site becoming self-sufficient for water with no requirement for tankers during summer season

2. Fuel and Fodder:

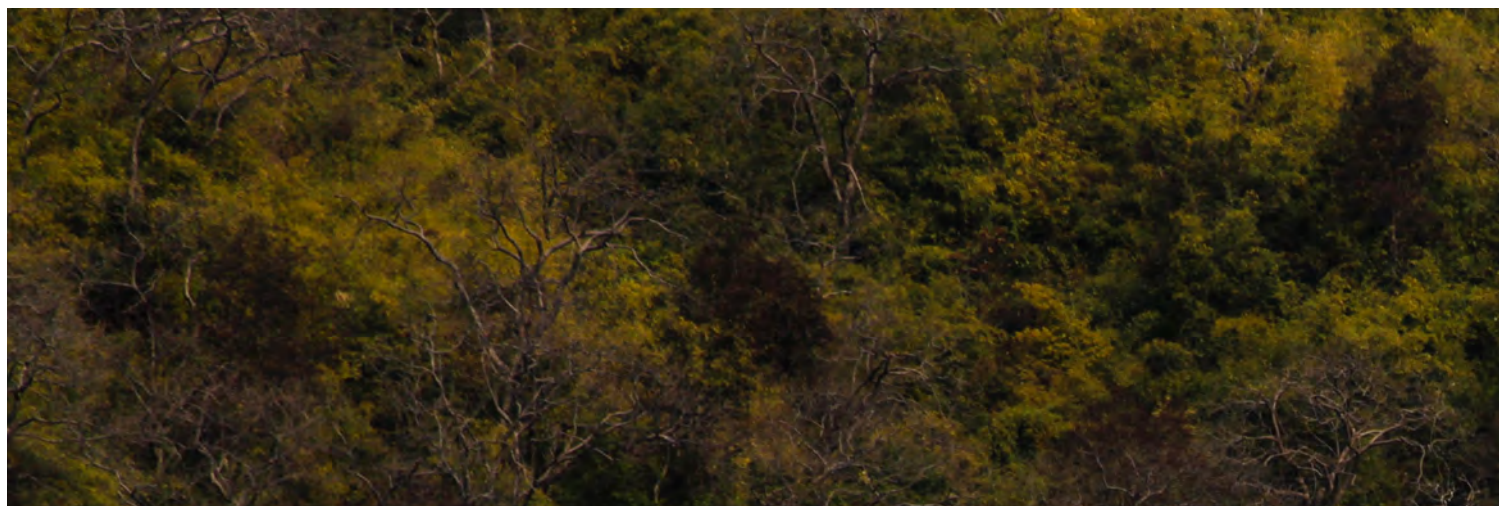
- a. Regenerated areas have attained pole stage forest with moderate density.
- b. Increased percentage of fodder plant composition which fulfills considerable fodder demands.
- c. Dense canopy cover helps suppression of lantana resulting in more grass availability

3. Forest:

- a. Bamboo is managed for suppressing *Lantana* with more natural regeneration of bamboo.

Measures:

- a. VFMS strictly protects plantation against lopping/illicit cutting.
- b. Review of FES agreement for rational enhancement of protection incentives
- c. Fire lines maintained with the support of HPFD



Short Term Vision (5 years)

1. Soil and Water:

- a. Significant increase in water availability in water bodies.
- b. Scaling up of activities of soil and water conservation from other programs or schemes of Government.
- c. Communities get good experience in planning for soil and water conservation activities.

2. Fuel and Fodder:

- a. Treated areas have well grown sapling stage plantations with 90% survival
- b. Understorey of *Lantana* is suppressed to half of its current intensity.

3. Forest:

- a. Bamboo plantations are protected and fully established.
- b. Harvesting of bamboo provides significant cash for managing the bamboo plantations and profits are shared by community as per PFM rules.

Measures:

- a. Effective protection of forest as well as plantation work is \ carried out by VFMS.
- b. Conflicts in usufruct sharing are resolved by VFMS
- c. VFMS is enabled to get funds from other donors / development agencies.

Project Period (Till 2020)

1. Soil and Water:

- a. Soil and water conservation related activities are planned and implemented.
- b. Baseline information is set up and systems for measuring springs / rivulets, pond water flows are in place.

2. Fuel and Fodder:

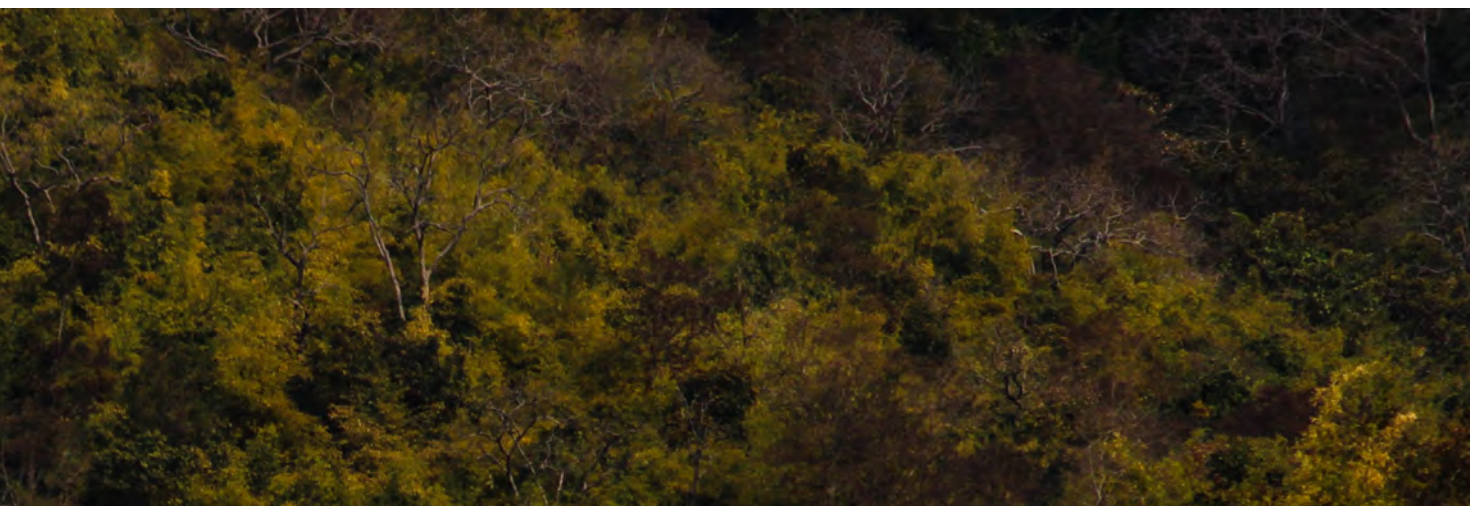
- a. Plantation of multi-purpose fodder yielding broad leaf tree spp. are carried out.
- b. Survival percentage up to 80 percent (of the same) is ensured.
- c. VFMS ensures protection of plantation against grazing and fire.

3. Forest:

- a. Fire line is managed. Planted areas are protected
- b. VFMS members are motivated to be actively involved in forest protection and management.

Measures:

- a. Degraded and denuded areas are brought under regeneration and plantation
- b. Rules for protection and usufruct sharing are framed and followed and VFMS strengthened.
- c. Soil and water conservation measures are planned and implemented.







Micro plan Objective

To incorporate the Forest Ecosystem Services (FES) approach into the forest management in the Undemarcated Protected Forest (UPF) of Kharota.



Methodology for data collection

1. The environmental data was collected from field measurements and Working Plan of Kunihar Forest Division.
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, anganwaris (Department of Social Justice and Empowerment) and local Revenue Office.
3. **Matrix** was used as a tool to collect information on seasonality and labour availability. Seasonality of engagement in agriculture, horticulture, wage labour, migration and labour availability for project activities along with the seasonality of rain was recorded. The same tool was used to gather data for human wildlife conflict.



4. A standard model of stakeholder mapping was used to understand the stakeholders in the planning site. 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.

CHAPTER- 3

Data Collection Results

Environmental Features: Kharota

ELEVATION RANGE: 606 m - 910 m

Precipitation



Annual Average
Precipitation for
the year 2010:

122 mm

Rain %  100%

Snow %  0%

Maximum Rainfall
Recorded:

1470 mm in
2000



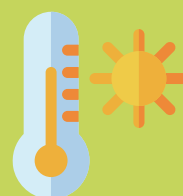
Minimum Rainfall
Recorded:

863.3 mm in
2009

Period of Frost:

Nil

Temperature



Monthly mean
maximum
temperature:

15.7 - 39.3°C

Mean minimum
temperature:

1.2 - 20.9°C

Dry months:
(with average monthly
precipitation < 50 mm)

April, October,
November,
December

Forest types and area



Forest Type	Area
5B/C2 Northern Dry Mix Deciduous Forest	185.87 ha
Total planning area: 33.2 ha	

Demographic Data (Kharota, Thad, Kukrapani)

POPULATION



49%

190 Males



44%

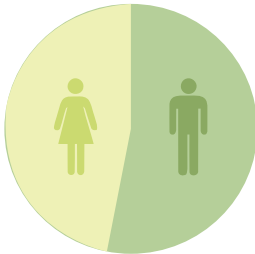
170 Females



7%

26 Children

GENDER RATIO



There are 894 females against 1000 males

LIVESTOCK



Sheep + Goat:
0 + 50



Cows: 35



Bullocks: 0



Horses + Mules: 1



Buffaloes: 18

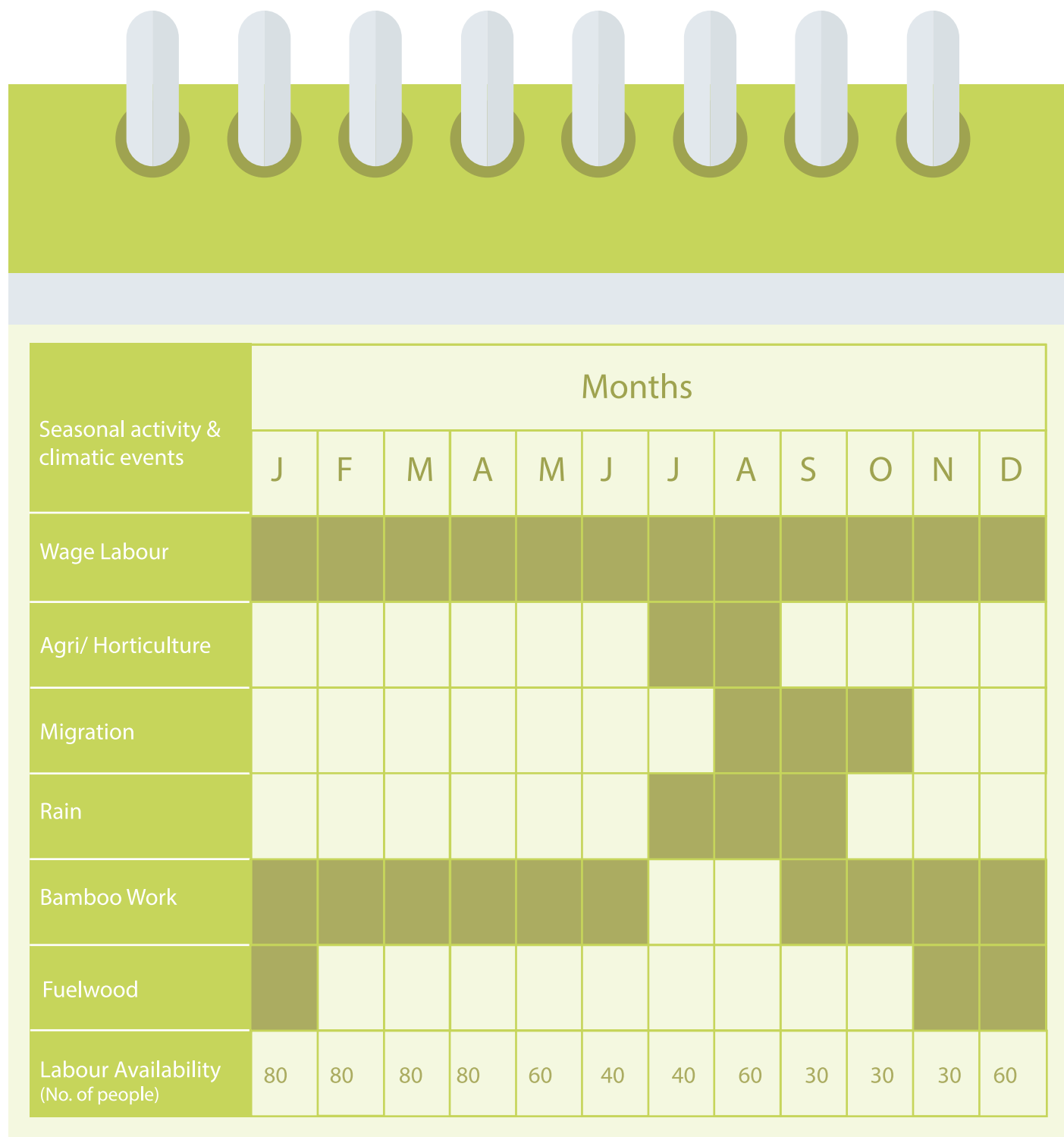
OCCUPATION

S.No.	Job Type	No. of Individuals
1.	Government	8
2.	Private	4
3.	Self Employed	32
4.	Agriculture/ Horticulture	21
5.	Wage Labour	32

LAND HOLDING

S.No.	Land Holding Type	No. of Households
1.	Marginal	43
2.	Small	7
3.	Medium	2
4.	Large	—

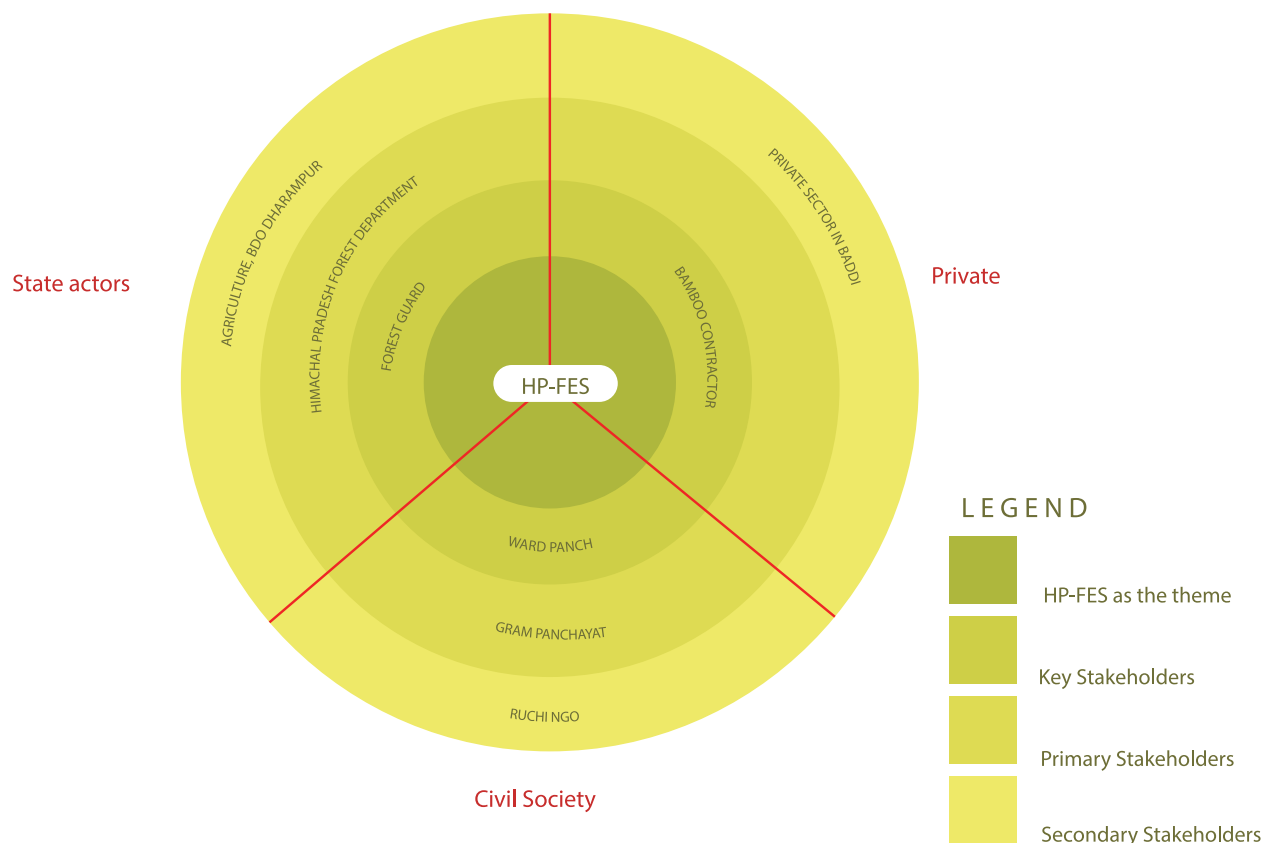
Seasonality calendar for Kharota



The image shows a seasonality calendar for Kharota, designed to look like a spiral-bound notebook. The calendar is a table with 8 rows and 13 columns. The first row is a header for the months. The subsequent rows represent different seasonal activities and climatic events. The last row shows the number of people available for labor each month.

Seasonal activity & climatic events	Months											
	J	F	M	A	M	J	J	A	S	O	N	D
Wage Labour												
Agri/ Horticulture												
Migration												
Rain												
Bamboo Work												
Fuelwood												
Labour Availability (No. of people)	80	80	80	80	60	40	40	60	30	30	30	60

Major Stakeholders



The inner most circle consists of the key stakeholders, followed by primary and secondary 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	Ward Panch	Gram Panchayat	RUCHI NGO
Private	Bamboo Contractor	—	Private Sector in Baddi
State	Forest Guard	Himachal Pradesh Forest Department	• Agriculture • BDO Dharampur

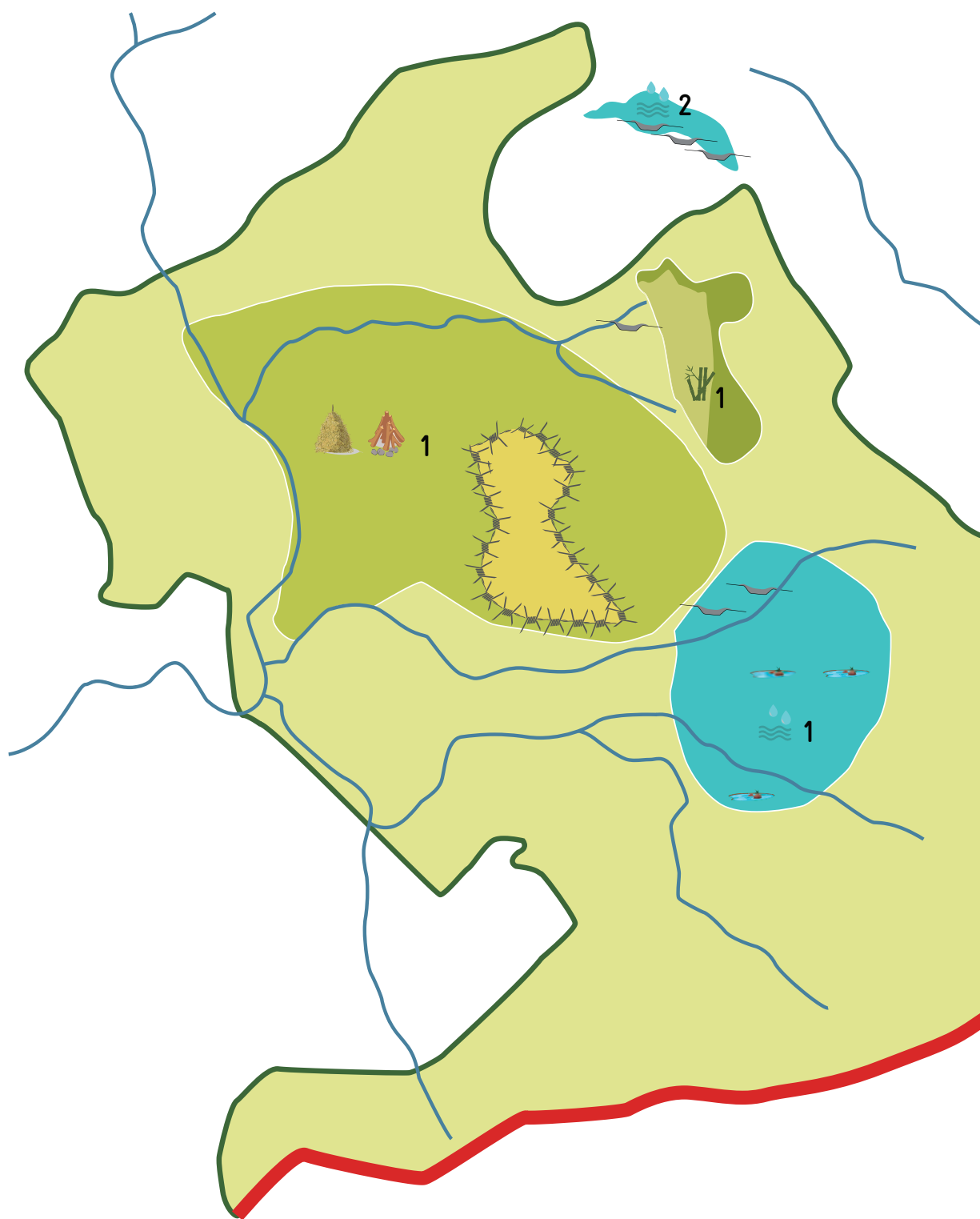


CHAPTER- 4

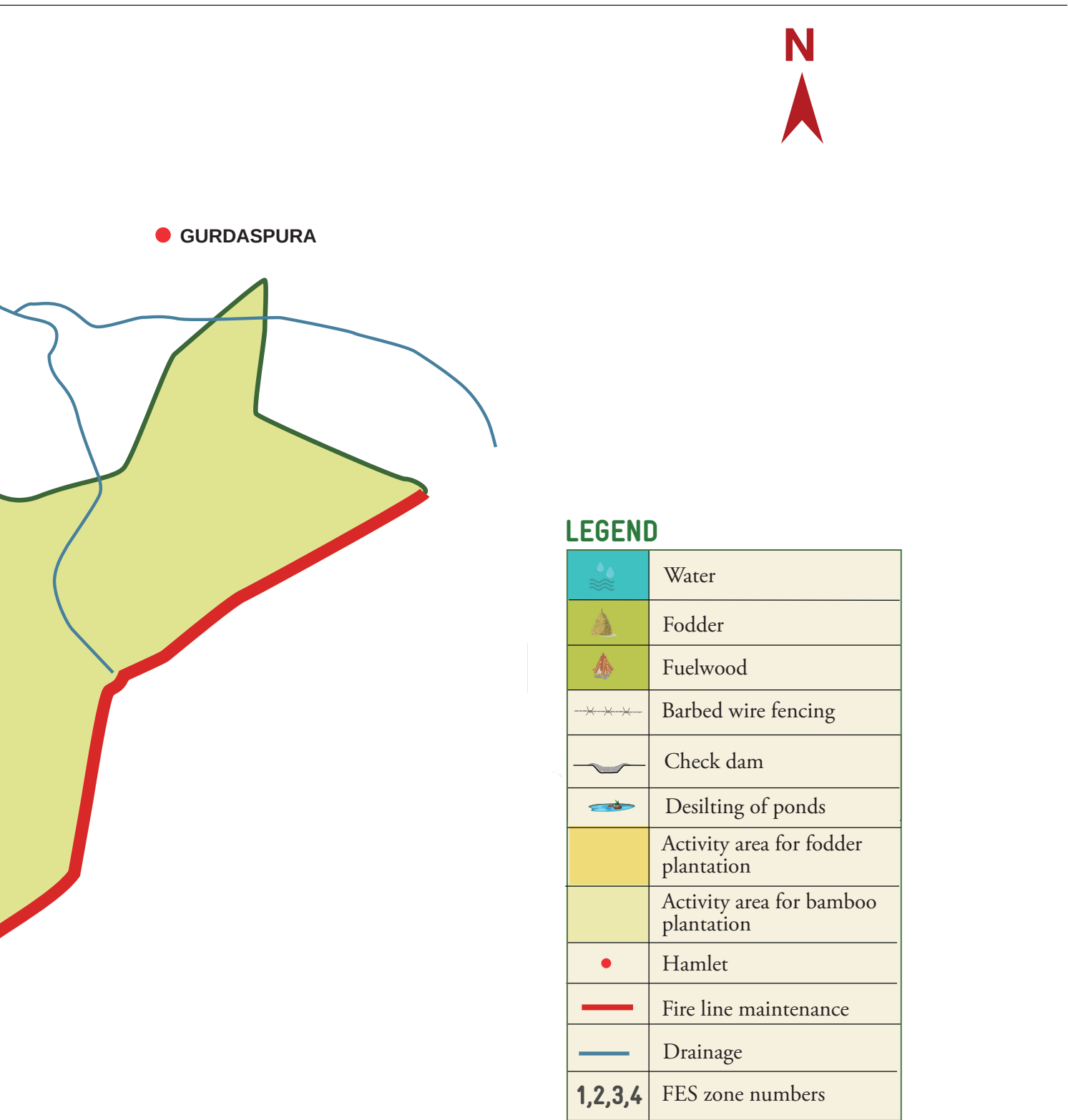
Rankwise Priority Forest Ecosystem Services

RANK	FOREST ECOSYSTEM SERVICE
1.	 Water
2.	 Fuelwood
3.	 Bamboo
4.	 Fodder
5.	 Stone

Priority and Intervention Map



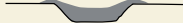
The above map consists of the forest boundary and the areas for the prioritised Forest Ecosystem Services.



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

Zonewise Management

COMPARTMENT:UPF Kharota

FES ZONE	INTERVENTIONS
 1	 Dry masonry check dam s  Desilting of ponds  Measures played to stop open grazing  Fire Protection
 2	 Dry masonry check dam s  Measures played to stop open grazing  Fire Protection
 1	 Khair  Kachnar  Remove Jantana  Barbed wire fencing to check grazing
 1	 Bamboo Plantation  Enumerating existing bamboo clumps and recording them  Benefit sharing as per PFM Rules
	 Clearing weeds  Cutting shrubs  Maintaining Fire Line  Fire training and provision for tools

Activity Plan and Budgeting

Increase of Water Supply and Decrease in Water Runoff Speed

Target: Increase in fodder and fuelwood availability

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

Fuelwood and Fodder Improvement

Target: Increase in Fuelwood and Fodder Availability

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						

Fire Management

Activity Plan for 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

CHAPTER- 5

Monitoring and Evaluation



1. Increase of Water Supply & Decrease in Water Runoff Speed

- Flow of water in sources in dry seasons of the year; April to mid-June & Oct to mid-Dec
- Measurement of runoff from the forest during the rainy season.
- Grazing to be stopped in zones identified for water



2. Fuelwood & Fodder Improvement

- Enrichment plantation of Broad-leaved species yielding fodder& grass % survival



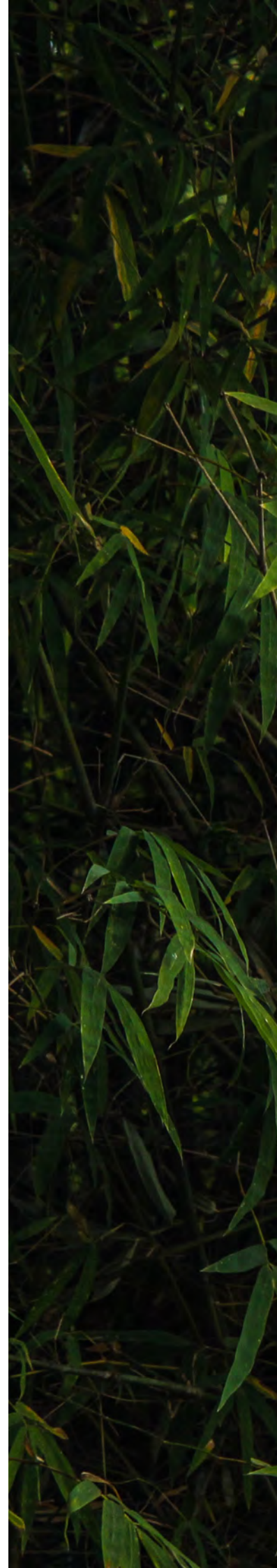
3. Bamboo Availability

- Enrichment plantation of Bamboo species yielding Bamboo for livelihood



4. Fire Management

- Fireline Maintenance and no instance of forest fires
- Protection of plantations from fire





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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