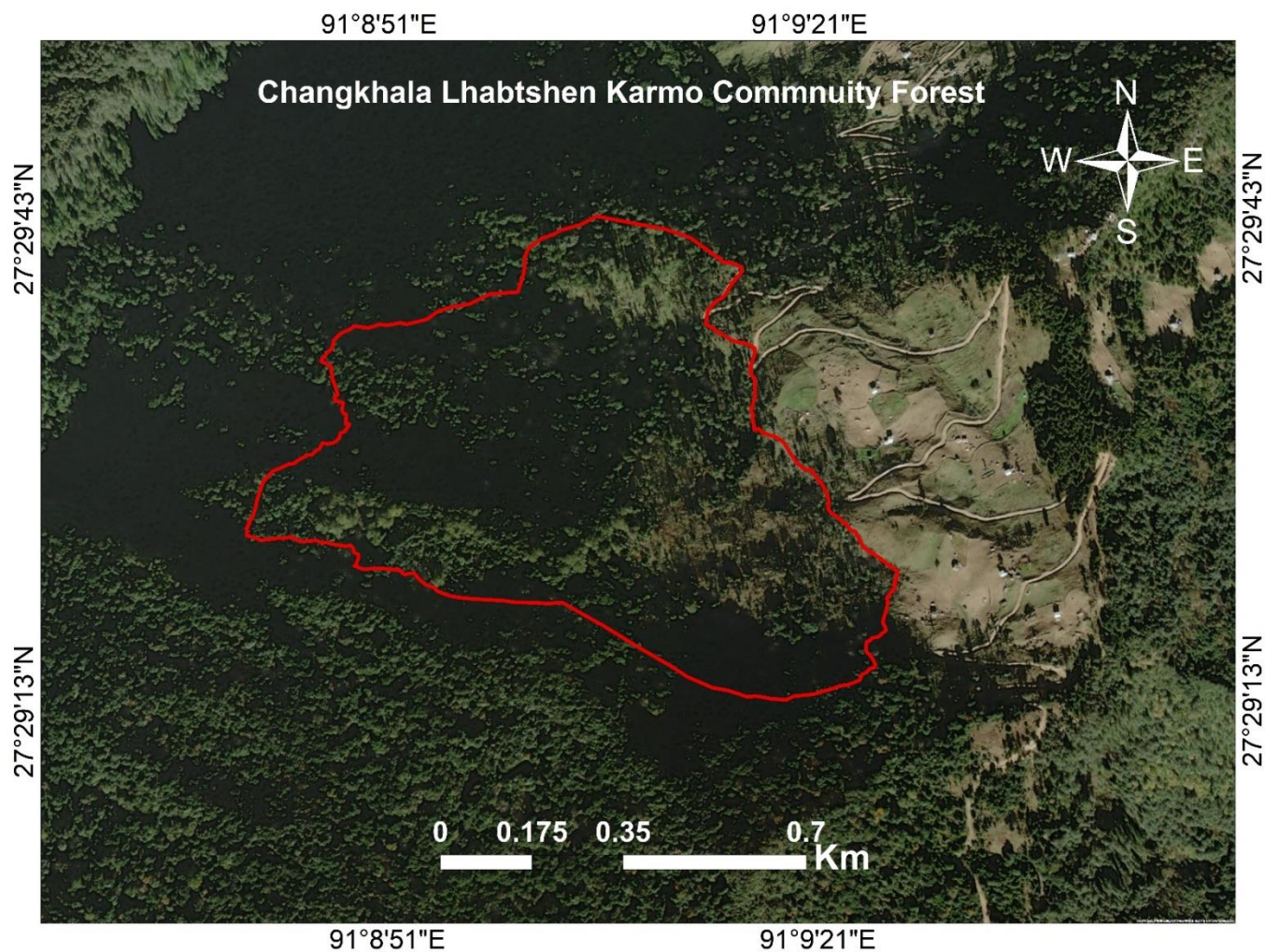

Changkala Lhabtsen Karmo Community Forest Management Plan

1st Revision




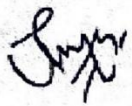
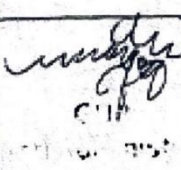
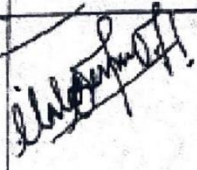
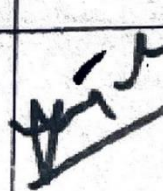
Plan Period: April 2023 – March 2033

Jaray Gewog
Lhuentse Dzongkhag
Phrumsengla National Park

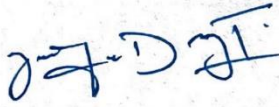
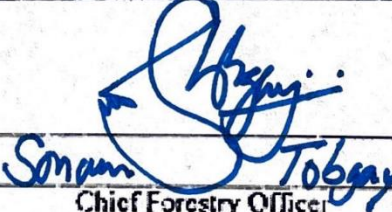
APPROVAL SHEET FOR COMMUNITY FOREST MANAGEMENT PLAN

Name of Community Forest:	Changkala Lhabtsen Karno CF
Chiwoq:	Changkala
Gewog:	Jaray
Dzongkhag:	Lhuentse
Production area (Hectare):	64.8 64.035
Protection & non production area (Hectare)	0.00
Total Community Forest Area (Hectare)	64.8 64.035
Total CFMG members (No. of HH):	22

Prepared and Submitted for Approval

	Community Forest Management Group	Forestry Representative	Geog Administration	Social Forestry Section	Division/ Park Office
Signature					
Name	Kinzang Thinley	Ugyen Tsewang	Kinzang Minjur	Bala Ram Mafchan	Yonten Norbu
Title	Chairperson	Forestry Representative	GLP	Head	CFO

REVIEW and RECOMMENDED FOR APPROVAL

Signature		
Name	Tse Haim Dorji	Sonam Tobgay
Title	Focal Officer	Chief Forestry Officer
Division	Forest Resources Planning and Management Division	Forest Resources Planning and Management Division

APPROVED BY:



**DIRECTOR
DEPARTMENT OF FORESTS AND PARK SERVICES**

Approved vide Notesheet No.DoFPS/FRPMD/FRPIS/CF_1(b)/2022-2023/1184 on dated June

13, 2023

TABLE OF CONTENTS

ACRONYMS	iii
EXECUTIVE SUMMARY	iv
PART I: MANAGEMENT PLAN.....	1
1. INTRODUCTION	1
2. TRADITIONAL RIGHTS AND RESPONSIBILITIES	2
3. COMMUNITY FOREST BOUNDARIES	2
4. RECORD OF PLANNING PROCESS	5
5. SOCIAL INFORMATION	5
6. FOREST INFORMATION (WHOLE FOREST).....	5
7. ANNUAL ALLOWABLE CUT (AAC).....	10
8. FOREST MANAGEMENT.....	10
a. Overall objective of the CF.....	10
b. Forest management Objectives	10
c. Demand assessment	11
d. Annual Allowable Cut and Demand	11
e. Forest management matrix.....	12
f. Silviculture options and systems.....	13
g. Participatory environmental assessment	13
h. Climate Hazard assessment.....	14
9. FOREST PRODUCE RANKING MATRIX.....	14
10. MONITORING PLAN	15
1. ANNUAL PLAN OF OPERATION FOR 10 YEARS.....	16
PART II: COMMUNITY FOREST BY-LAWS	17
Membership arrangements.....	17
Management Committee formation	17
Terms of Reference for CFMG Management Committee	17
TOR of Chairperson.....	18
TOR of Secretary	18
TOR of Treasurer	19
Roles and Responsibilities of CFMG and CFMG members.....	19

Fees, Fines and Penalties	20
Managing CFMG fund and credit.....	21
Benefit Sharing Mechanism.....	22
Meetings.....	23
Conflict Management.....	23
Amendment of CFMP and by-laws	23
Powers of the Department.....	24
ANNEXURE.....	25
Annex 1: Approval sheet (last plan)	25
Annex 2: CFMG member list	26
Annex 3: Forest resource assessment compilation sheet	27
Annex 4: Stand & stock table: Number of Trees	29
Annex 5: Stand & stock table: Basal area.....	31
Annex 6: Stand & stock table: Volume	32
Annex 7: CF sample plot coordinates	34

List of Figures

Figure 1: Map showing the location of CF	3
Figure 2: Land use/ Land cover map of CF	3

ACRONYMS

Ac:	Acre
AAC:	Annual Allowable Cut
Ba:	Basal area
CFO:	Chief Forestry Officer
CF:	Community Forest
CFMG:	Community Forest Management Group
CFMP:	Community Forest Management Plan
DoFPS:	Department of Forestry and Park Services
FNCA:	Forest and Nature Conservation Act
FNCRR:	Forest and Nature Conservation Rules and Regulations
Ha:	Hectare
Hh:	Household
NWFP:	Non-Wood Forest Product
PNP:	Phrumsengla National Park
SRFL:	State Reserved Forest Land
ToR:	Terms of Reference
TL:	Truck load
PR:	Phawan Range

EXECUTIVE SUMMARY

Changkala Lhabtsen Karmo Community Forest was established in the year 2013 which was initiated by only seventeen households. At its later years five more households joined the community forest management group. The community forest covering an area of 64.035 hectares was successfully managed by 22 household for the last ten years (2013-2023). With expire of Community Forest Management Plan for last 10 years, a revised Community Forest Management Plan is drawn for another 10 years (2023-2033).

The Community Forest consists of 64.035 ha as net operable area. The community will manage the forest with objective; *To manage the community forest eco-friendly for the benefit of both present and future generation.*

The Community Forest consist a single block of good condition cool broadleaved forest covering almost entire CF area with majority of matured trees. Canopy density is dense ($> 70\%$) however with moderate spread of mother trees (10-50 seed trees per ha). Natural regeneration is scattered. Soil in the forest is non erosive and stable ($>50\%$) of soil covered by vegetation with moderate slope (10-30 degree). The forest is exposed to limited biotic pressures (forest fire, grazing, fodder collection, non-wood forest product collection and grazing etc.). Average basal area is estimated at $25.77\text{m}^2/\text{ha}$ with average volume of $217.78\text{m}^3/\text{ha}$. Annual Allowable Cut is calculated at 128.28m^3 while annual demand is estimated at 142.31m^3 .

Timber harvesting, firewood extraction, thinning, and cleaning are prescribed activities inside CF to improve forest condition and meet local requirements. Retention of mother tree, forest plantation and promotion of natural regeneration are priority. Thinning and cleaning of forest floors are of medium and low priority in the CF.

The Community Forest Management Plan and Community Forest By-laws are written in accordance to the Community Forestry Field Manual for Bhutan, Third Edition, 2018, provisions of the Forest and Nature Conservation Act of Bhutan, 1995, Forest and Nature Conservation Rules and Regulations of Bhutan, 2017, and Forest and Nature Conservation (Amendment) Rules and Regulations of Bhutan, 2020.

PART I: MANAGEMENT PLAN

1. INTRODUCTION

Changkala-Wayang is a small village under Jaray Geog, Lhuentse dzongkhag located at an altitude of 2500m above sea level. The village is connected by farm road which is about 18 km from Mongar-Lhuentse high way. The village consists of 23 households which are members of the Changkala Community Forest. The village have access to farm road and mobile network connection since 2011. The maize is the main stable crop cultivated. The cash crops cultivated are potatoes, chilli and other vegetables at smaller scale. The agriculture products are hardly enough for self-consumption and only few members of the community sell for income generation.

Changkala Labtsen Karmo Community Forest was established in 2013. It covers a total area of 64.035 ha of State Reserved Forest (SRF) land. It was initially managed by 17 households but now with addition of 6 more households so 23 households are managing the CF. First Community Forest Management plan was drawn for 10 years (2013-2023).

Members of Community Forest Management Group (CFMG) implemented range of activities in the last 10 years. CFMG and committee meetings, boundary demarcation, forest cleaning, plantation, harvesting, and monitoring are some major activities carried out. The CFMG contributed about 231 days to CF activities. About 1672 trees of different size classes were harvested from the CF for various propose (new house construction, house renovation, fencing posts, flag poles and firewood) in the last plan period. The CFMG fund balance stands at Nu. 78,272/- (Seventy-eight thousand two hundred seventy-two).

This revised CFMP is being drawn for next 10 years (April 2023 – March 2033) following the close of CFMP for last 10 years (2013 – 2023). The current CFMP and CF by-laws are written in accordance to the provisions of the Forest and Nature Conservation Act of Bhutan, 1995 (FNCA 1995), Forest and Nature Conservation Rules and Regulations of Bhutan, 2017 (FNCRR 2017) and Forest and Nature Conservation (Amendment) Rules and Regulations of Bhutan, 2020.

The CF consists a single block due to uniformity of the forest stand. Average basal area (Ba.) is estimated at 25.77 m²/ha with average volume of 217.78 m³/ha. Annual Allowable Cut (AAC) is calculated at 128.28 m³ while annual demand is estimated at 142.31 m³.

The 23 households (Hh) of Changkala village will manage the CF for sustainable production and supply of timber, firewood, and other forest produces. This will enable CFMG the protection, ownership rights and grant easy access to forest produces as well as aid income generation and improve livelihood over the next 10 years.

2. TRADITIONAL RIGHTS AND RESPONSIBILITIES

Product/ Service	Rights	Responsibilities	Traditional Management System
<i>Any forest products including NWFPs and services</i>	<i>Who has current rights and what are the rights?</i>	<i>Who and what are the responsibilities?</i>	<i>Past or current practice of traditional management system</i>
Timber	All CFMG with a valid permit has equal access to timber resources.	Community and DoFPS are responsible for resource protection and utilization.	Harvest suitable trees for timber.
Firewood	All CFMG with valid permit in the community has right to collect.	DoFPS issues permits and carry out marking.	Collect when needed through permit system.
Flag poles	Everyone with valid permit in the community has right to collect.	DoFPS issue permits and carry out marking.	No management systems followed.
NWFPs	Everyone has right to collect.	DoFPS issue permits if it needs to be traded.	Collections carried without permit.
Grazing	All CFMG have right to graze cattle inside CF except inside the plantation area.	All CF members to monitor the grazing practice	All the community people were allowed for free grazing

3. COMMUNITY FOREST BOUNDARIES

Total community forest area: 64.035ha

Boundaries	Description of the permanent features
West	Lai Jaap
East	Geypu Gang
South	Tongkomey
North	Brogsar

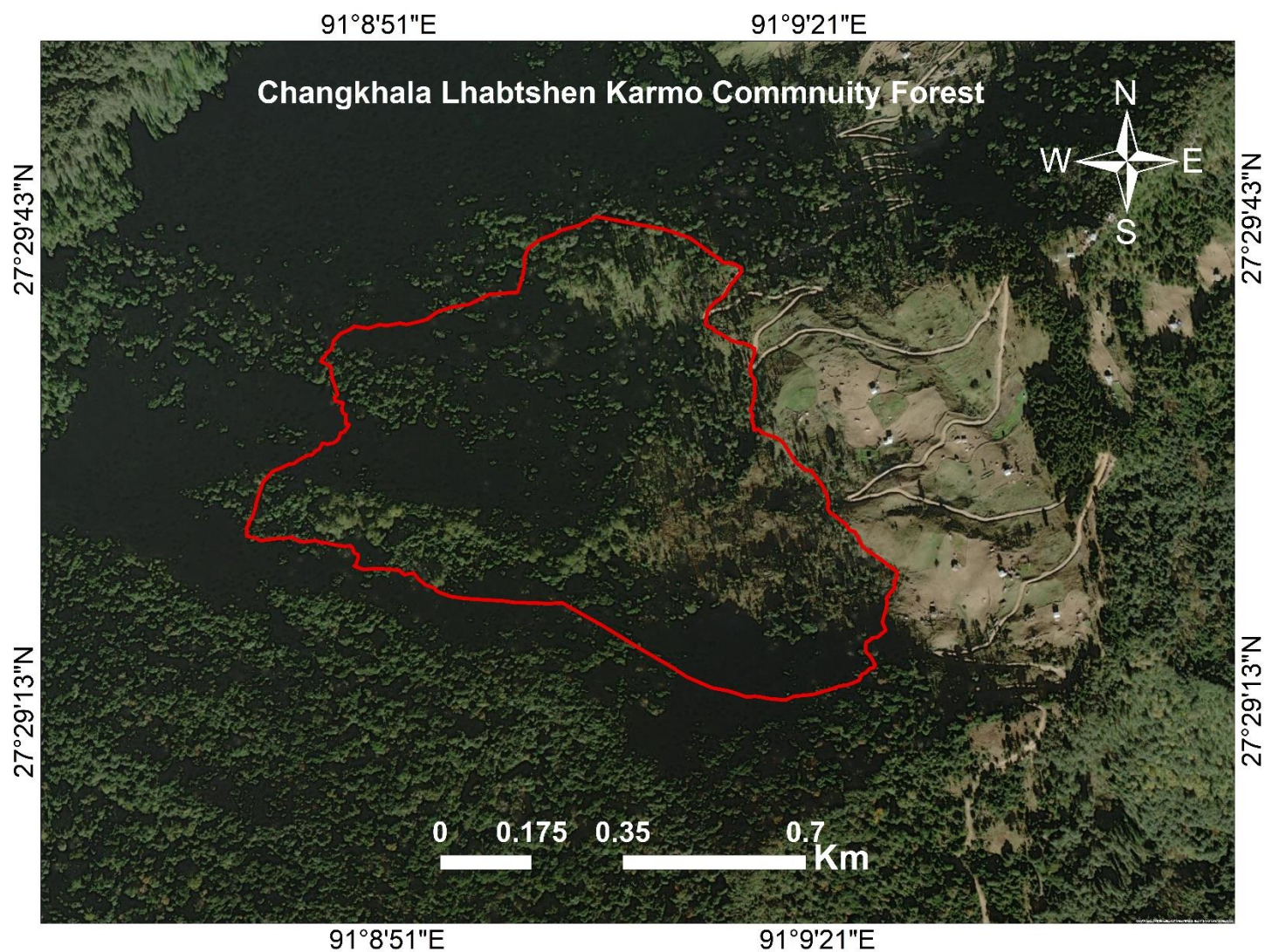


Figure 1: Map showing the location of CF

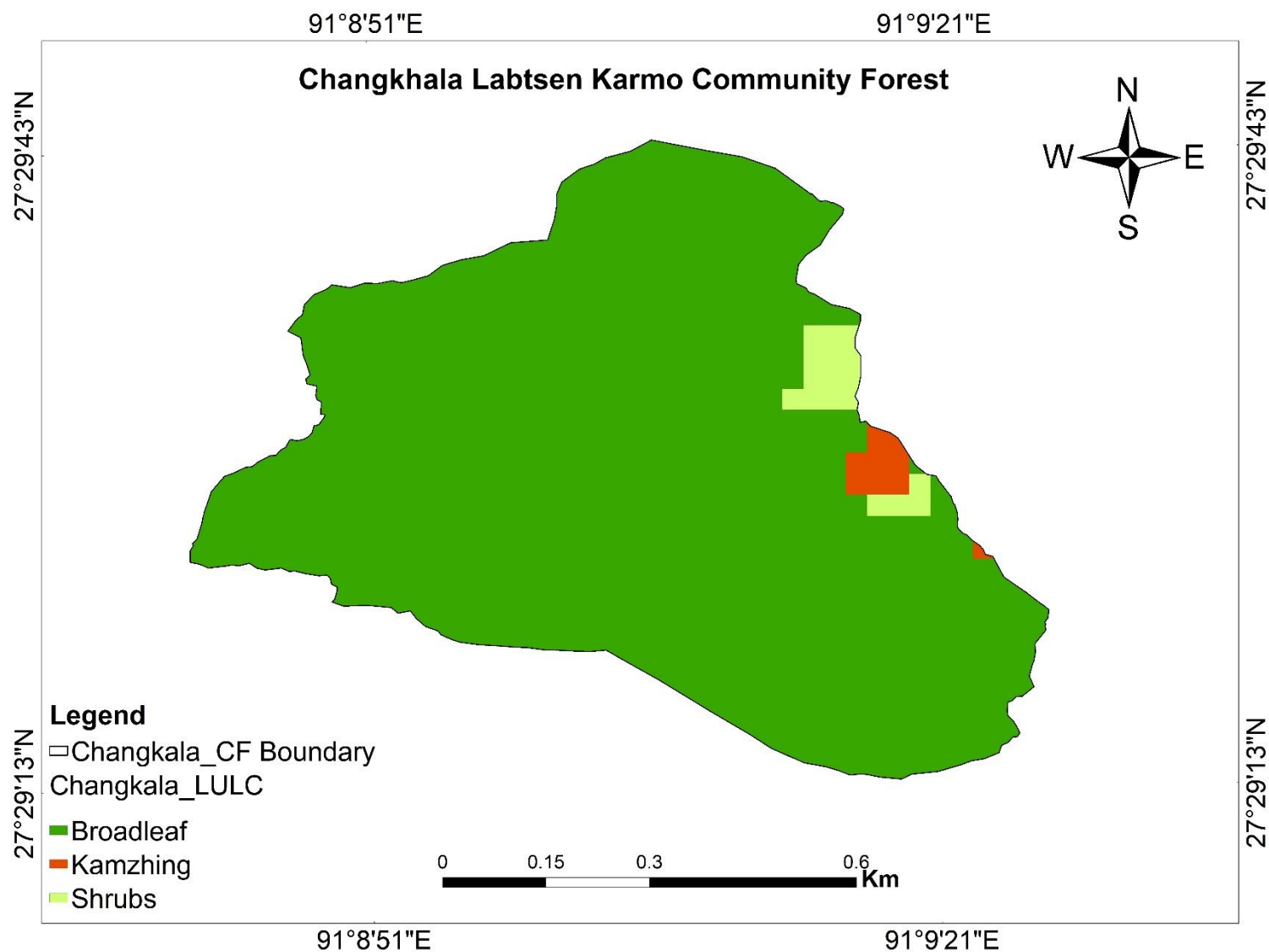


Figure 2: Maps showing the forest types of CF

4. RECORD OF PLANNING PROCESS

- I. CF awareness and CFMG formation – February, 2013
- II. Submission of CF application for establishment – February, 2013
- III. CF management plan writing and drafting of CF By-laws – February, 2013
- IV. Submission of CFMP for approval – March, 2013
- V. Approval of CFMP by Department of Forests and Park Services (DoFPS) – April, 2013
- VI. Handover of the ownership certificate to CFMG- May, 2013
- VII. Implementation of CF management plan- May, 2013
- VIII. Revision of CFMP- April, 2023

5. SOCIAL INFORMATION

	Description
Name of the Villages	Changkala and Wayang
Ethnic groups with CFMG	All the CFMG members are native to the village and flows the same cultural and traditional lives.
Infrastructure:	Lhakhang, Outreach clinic (ORC), farm road, Electricity and Drinking water.
Total household (HH) number of CFMG	22
% Male and % Female	77 and 23
Main source of income	On-farm activities
Cattle population of the CF area	52 (Approx.)
Main Crops	Maize, Cabbage, Chilli and Beans
Cropping pattern	Seasonal cropping
Any other information	-

6. FOREST INFORMATION (WHOLE FOREST)

Format 1. Forest Resource Assessment	
Name of Community Forest	Changkala Labtsen Karmo CF
Date of Assessment	12-03-2023 to 14-03-2023
Name of block	Changkala
Block area	64.035 hectares
Name of recorder	Bala Ram Mafchan, Tsheten Gyeltshen and Phuntsho Namgyal

Forest & Habitat Type (tick all those present, Refer definition below)				
Forest <input checked="" type="checkbox"/>	Thicket/pole stage <input type="checkbox"/>	Scrubland <input type="checkbox"/>		
Grassland <input type="checkbox"/>	Plantation <input type="checkbox"/>	Other <input type="checkbox"/>		
Vegetation type				
Subtropical forest <input type="checkbox"/>	Chirpine forest	Warm broadleaved forest <input type="checkbox"/>	Blue pine forest	<input type="checkbox"/>
Cool broadleaved forest <input checked="" type="checkbox"/>	Mixed conifer forest <input type="checkbox"/>	Fir forest <input type="checkbox"/>	Other	<input type="checkbox"/>

Definitions	
Broadleaf forest	75% or more of the tree species present are hardwoods
Conifer forest	75% or more of the tree species present are coniferous
Mixed forest	All other combinations of tree species
Mature Forest	Vegetation dominated by mature trees (trees > 40 cm dbh)
Thicket/pole stage	Vegetation > 3m in height consisting of young trees usually < 40cm dbh
Shrubs	Non-tree species > 2m in height (often thorny and multi-stemmed)
Shrub-land	Vegetation dominated by woody multi-stemmed plants or single stemmed plants and regeneration mostly < 3 m tall
Grassland	Vegetation dominated by grass species and where only a small part of the area is covered by trees or shrubs.
Crown cover	The percentage of the area covered by the crowns of trees forming the main canopy (usually mature trees)
Regeneration	Seedlings, saplings and coppice re-growth of naturally occurring tree species that are less than 1.3 metres tall but greater than 30cm tall
Seed trees	Mature trees with healthy crowns capable of producing flowers and seed
Soil Cover	The percentage of the area with soil surface covered either by live vegetation or a layer of other plant vegetation

Forest Condition (complete if the block is mainly forest)	
Write the names of main tree species	
Local name	Scientific name
Karshing	<i>Magnolia champaca</i>
Tarkashing	<i>Juglans regia</i>

Jansang shing			<i>Schima wallichii</i>		
Char shing			<i>Betula spp</i>		
Plantation					
Is there any plantation?	Yes	<input checked="" type="checkbox"/>	Approximate height of planted trees (m)		
	No	<input type="checkbox"/>			
Year planted			Is the plantation?	Under stocked	<input checked="" type="checkbox"/>
				Stocked	<input type="checkbox"/>
			2016	Overstocked	<input type="checkbox"/>
Forest Condition -Age					
Mature <input checked="" type="checkbox"/> Main canopy of mature trees	Pole stage <input type="checkbox"/> Main canopy of pole-stage trees	Scrubland <input type="checkbox"/> Main canopy of shrubs, young trees or regeneration	Any <input type="checkbox"/> No continuous canopy. Isolated trees only		

Forest Condition - Canopy density (tick main canopy)		
Dense <input checked="" type="checkbox"/> Canopy density > 70%	Open <input type="checkbox"/> Canopy density < 70%	Very open <input type="checkbox"/> No real canopy. Isolated trees only

Forest Condition – Regeneration (including coppice re-growth)		
Abundant <input type="checkbox"/> Regeneration easy to find in most places	Scattered/few <input checked="" type="checkbox"/> Regeneration only in some places and hard to find	None <input type="checkbox"/> No regeneration
Write the names of the 3 main tree species in the regeneration		
1) Symplocos	2) Quercus	3)
Regeneration: Seedlings > 30cm and < 1.3m height		

Forest Condition – Approximate density of seed trees		
High <input type="checkbox"/> > 50 seed trees per ha	Moderate <input checked="" type="checkbox"/> 10 – 50 seed trees per ha	Low <input type="checkbox"/> < 10 seed trees per ha

Block Condition – Summary (Use the forest condition class box below to get an average condition for the block)			
Poor <input type="checkbox"/>	Average <input checked="" type="checkbox"/>	Good <input type="checkbox"/>	Very Good <input type="checkbox"/>
Does the main forest canopy consist of large, mature trees?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

Forest Condition Class Box				
Age	Canopy density	Regeneration & coppice	Seed tree class	Condition
Mature forest	Dense	Abundant		Very good
		Scattered/few		Good
	Open	Abundant		Good

		Scattered/few		Average
Pole stage forest	Dense	Abundant		Good
		Scattered/few		Average
	Open	Abundant		Average
		Scattered/few		Poor
Shrubland and young growth	Dense		Moderate or High	Average
	Dense		Low	Average
	Open		Low	Poor
Any	Very open	None		Poor
Open spaces (complete if there are significant open spaces in the block)				
Approximate total open space area (ha)			-	
Dominant vegetation type in the open space			-	
Cause of open space e.g. grazing, fire, harvesting, etc.			-	

Grazing and fodder (complete if the forest block is used for grazing or fodder)							
Grassland type							
Natural	<input checked="" type="checkbox"/>	Man-made	<input type="checkbox"/>	Mixture	<input type="checkbox"/>	Predominantly forest	<input type="checkbox"/>

Main fodder species being used (<i>list 3 only</i>)	
Local name	Scientific name
pho shing	<i>Ficus virens</i>
-	-

Pasture quality (list the 3 dominant species in the grassland)		
Local name	Scientific name	Palatable/unpalatable
-		
-		
-		

Use pattern		Seasonal	<input checked="" type="checkbox"/>	All year	<input type="checkbox"/>	
Type of user	Migratory	<input type="checkbox"/>	Local	<input checked="" type="checkbox"/>	Both	<input type="checkbox"/>

Catchment Condition (use catchment condition class box below)	
(i) Catchment condition – soil cover	
Soil cover	Soil cover class
> 50% of the soils are covered by vegetation	high <input checked="" type="checkbox"/>
25 - 50% of the soils are covered by vegetation	moderate <input type="checkbox"/>
< 25% of the soils are covered by vegetation	low <input type="checkbox"/>
(ii) Catchment Condition - Soil type and erosivity	
Soil type (colour, texture and type)	
Erosive <input type="checkbox"/>	Non-erosive <input checked="" type="checkbox"/>
disperses and/or breaks up in water easily	stable to water flow
(iii) Catchment Condition - Slope	

Slope (degrees)	Slope steepness class		
<10°	Gentle	<input type="checkbox"/>	
10° – 30°	Moderate	<input checked="" type="checkbox"/>	
> 30°	Steep	<input type="checkbox"/>	
Catchment Condition – Summary (Use the catchment condition class box below to get the average condition for the block)			
Less critical	<input checked="" type="checkbox"/>	Moderately critical	<input type="checkbox"/>
		Highly critical	<input type="checkbox"/>

Catchment Condition Class Box			
Slope category	Soil erosivity	Cover class	Condition class
Flat	Erosive	Moderate or high	Moderately critical
		Low	Highly critical
	Non erosive	any	Less critical
Moderate	Erosive	Moderate or high	Moderately critical
		Low	Highly critical
	Non erosive	Moderate or high	Less critical
		Low	Moderately critical
Steep	Erosive	Moderate or high	Moderately critical
		Low	Highly critical
	Non erosive	Moderate or high	Moderately critical
		Low	Highly critical

Fauna (List any animal or bird species seen or which are known from the block)	
Local Name	Scientific name
Ri-Phag	<i>Sus scrofa</i>
Dom	<i>Ursus thibetanus</i>
Shauwa	<i>Cervus unicolor</i>
Kasha	<i>Muntiacus mutjack</i>
Pra	<i>Macaca assamensis</i>
Raksha	<i>Trachypitecus pileatus</i>
Zee	<i>Panthera pardus</i>
Great hornbill	<i>Buceros bicornis</i>
Rekawa	<i>Kalij pheasant</i>

Biotic Pressures (tick those present)			
Fire	Common <input type="checkbox"/>	Occasional <input type="checkbox"/>	Absent <input checked="" type="checkbox"/>
Grazing	Heavy <input type="checkbox"/>	Limited <input checked="" type="checkbox"/>	Absent <input type="checkbox"/>
Fodder collection (List main species used)	Common <input type="checkbox"/>	Limited <input checked="" type="checkbox"/>	Absent <input type="checkbox"/>
NWFP collection (List the main products including bamboo & cane)	Common <input type="checkbox"/>	Limited <input checked="" type="checkbox"/>	Absent <input type="checkbox"/>
Leaf litter collection	Common <input type="checkbox"/>	Limited <input checked="" type="checkbox"/>	Absent <input type="checkbox"/>

Biotic Pressures (tick those present)			
Encroachment	Common <input type="checkbox"/>	Occasional <input type="checkbox"/>	Absent <input checked="" type="checkbox"/>
Pole harvesting	Common <input type="checkbox"/>	Occasional <input checked="" type="checkbox"/>	Absent <input type="checkbox"/>
Fuel wood harvesting	Common <input checked="" type="checkbox"/>	Occasional <input type="checkbox"/>	Absent <input type="checkbox"/>
Timber harvesting	Common <input checked="" type="checkbox"/>	Occasional <input type="checkbox"/>	Absent <input type="checkbox"/>
Hunting	Common <input type="checkbox"/>	Occasional <input type="checkbox"/>	Absent <input checked="" type="checkbox"/>
Others (describe)			

Potential Management Options (list any potential management options for the CF/block)	
1	Thinning and selective felling of mature trees to enhance regeneration of seedlings
2	Cleaning and clearing of under growth bushes
3	Promote natural regeneration
4	Need plantation in some open areas

7. ANNUAL ALLOWABLE CUT (AAC)

Annual Allowable Cut Table (in M³)							
AAC	Drashing	Cham	Tshim	Dangchung	Firewood	Flag Poles	Fencing posts
Block I	56.91	7.23	1.9	0.02	48.45		9.17
Total AAC	56.91	7.23	1.9	0.02	48.45		9.17

8. FOREST MANAGEMENT

a. Overall objective of the CF

- i. To manage the community forest eco-friendly for the benefit of both present and future generation

b. Forest management objectives

- i. To control over exploitation by sustainably harvesting forest products.
- ii. To conserve flora and fauna species.
- iii. To improve livelihood of community by sale of excess products.
- iv. To protect water sources for clean drinking water supply.

c. Demand assessment

Forest Produce Demand Assessment (Summary)			
Produce	Annual household requirement (estimated)		Number of households using the produce
	No. of Trees	Volume (m³)	
Drashing	30	43.57	3
Cham	36	10.26	3
Tshim	36	4.34	3
Dangchung	30	1	3
Firewood	22	19.77	All
Flag Poles	216	12.04	2
Fencing Posts	140	31.67	5
Shingle	0	0.00	0
NWFPs	0	0.00	0

d. Annual Allowable Cut and Demand

AAC and Demand							
Produce	Total AAC		Total Annual Demand		Difference		Comments
	No. of Trees	Volume (m³)	No. of Trees	Volume (m³)	No. of Trees	Volume (m³)	
Drashing	27	56.91	30	63.23	-3	-6.32	Shortage, meet from SRF
Cham	12	7.23	36	10.26	-24	-3.03	Shortage, meet from SRF
Tshim	7	1.9	36	4.34	-29	-2.244	Shortage, meet from SRF
Dangchung	1	0.02	30	1	-29	-0.98	Shortage, meet from SRF
Firewood	28	48.45	22	19.77	6	28.68	Excess
Fencing post	26	9.17	140	31.67	-144	-22.5	Shortage, meet from firewood
Flag Poles	0	0	216	12.04	-216	-12.04	Shortage, meet from SRF

e. Forest management matrix

Management procedures						
Products	Drashing	Cham	Tsim	Dangchung	Firewood	Posts
Main Species	Champak, Betula & Walnut	Champak, Betula & Walnut	Champak, Betula & Walnut	Betula & Champak	Quarcus	Quarcus
Problems	Shortage	Shortage	Shortage	Shortage	Adequate	Shortage
Opportunities	Improve stands Retain mother trees and met shortage from SRF Protect other young timber species	Improve stands Met shortage from SRF Protect other young timber species	Improve stands Met shortage from SRF Protect other young timber species	Improve stands Met shortage from SRF Protect other young timber species	Supplement other use (Fencing posts)	Improve stands Use trees unfit for timber And meet from excess firewood
Management Objectives	✓ To enhance forest condition through thinning, pruning and cleaning. ✓ To protect resources from illegal activities and forest fire. ✓ Income generation in long term (revenue/ permit fees).					
Activities	Fire line Construction Clearing/ cleaning forest floor Pruning Retention of mother trees Thinning Promote natural regeneration					
Procedures	- Seek support from relevant stakeholders - CFMG to contribute labour, - Concern forest office to support technically					
Responsibility	CFMG, Concerned Forest Office & FMID/ DoFPS					

f. Silviculture options and systems

Utilization	Improvement	Protection	Silviculture system
There is shortfall of resources in the CF except fuel wood, requirement of all categories of timber more than ACC shall met from the SRF/LFMA.	<ol style="list-style-type: none"> Any form of timber shall harvest as per the ACC reflected in the management plan for sustainability. Lops, tops and off cuts shall remove to enhance the under growth of stands. Pruning and thinning must carry out to promote the growth of clean bole stands. 	<p>The CFMG shall carry out the timely patrolling to control and avoid the illegal activities inside the CF.</p> <p>Important species of flora and fauna found in the CF shall be protected.</p> <p>Drinking water sources and any water sources must be protected.</p> <p>Plantation and new sampling must protect form grazing and any other damages.</p>	Single tree selection system must follow to minimize the damage to surrounding.

g. Participatory environmental assessment

Participatory Environmental Assessment Chart								
Proposed activity in CF	Potential environment effect				Potential socio-economic effects			
	Soil	Water	Wild animals	Plants	Traditional forest use	Cultural and religious	Local employment	Local benefits from forest produce
Timber extraction	--	--	--	+++	0	0	0	+++
Firewood extraction	--	--	--	+++	0	0	0	+++
Water sources protection	+++	+++	+++	+++	0	0	+++	+++
Patrolling	+++	+++	+++	+++	+++	+++	0	+++
Grazing control	+++	+++	+++	+++	0	0	0	---
Plantation	+++	+++	---	---	0	0	0	+++
Clearing	---	---	---	+++	0	0	0	+++
Retention of mother	+++	+++	+++	+++	0	+++	0	0

trees							
Positive effects shown by +++, Negative effects shown by ---, No effect (or not relevant) shown by 0							
Procedure to address potential negative environmental effects							
Activity	Procedure						
Timber harvesting	Restrict timber harvesting from locations where the slope is greater than 45°. Restrict felling of trees within 100m radius of any water bodies. Follow single tree fell system to minimize the damage to surrounding.						
Firewood extraction	Restrict harvesting from places where the slope is greater than 45°. Restrict felling of trees within 100m radius of any water bodies. Extraction limited to meet the CFMG demands.						
Grazing control	Follow seasonal grazing with monitor looking after cattle. Restrict free grazing to reduce damage of saplings.						
Thinning	Remove only dead, diseased and dying trees on gradual basis.						
Clearing	Restrict clearing to genuine needs only.						

h. Climate Hazard assessment

	Windstorm	Flashflood	Anima disease	Reduced crop yield	Forest fire
Windstorm	X	Windstorm	Animal disease	Reduced crop yield	Windstorm
Flashflood		X	Flashflood	Reduced crop yield	Flashflood
Anima disease			X	Reduced crop yield	Forest fire
Reduced crop yield				X	Reduced crop yield
Forest fire					X
Results: 1 st = Reduced crop yield; 2 nd = Windstorm and flashflood; 3 rd = Forest fire and animal diseases					

9. FOREST PRODUCE RANKING MATRIX

Species local name ↓	Uses →	Drashing	Cham	Tsim/dangchung	Fuel wood	Flag poles/fencing posts	Leaf litter
Kar shing	Preference	xxx	xxx	xxx	x	x	0
	Availability	y	y	y	y	y	yy
Sisi shing	Preference	0	0	0	xxx	xxx	x
	Availability	z	z	z	y	y	yy
Tongphu shing	Preference	xxx	xxx	xxx	x	xxx	0
	Availability	yy	yy	yy	yy	yyy	z
Guma shing	Preference	0	0	0	xxx	xx	x
	Availability	y	y	y	y	yy	yy

Tago shing	Preference	xxx	xxx	xxx	x	0	0
	Availability	y	y	y	y	y	y
Yae shing	Preference	xx	xx	xx	x	0	0
	Availability	yy	yy	y	y	y	yy
Jan shing	Preference	xx	x	x	x	x	x
	Availability	y	y	y	y	y	y
Meham shing	Preference	0	0	0	xxx	xx	x
	Availability	y	y	y	y	y	yy

xxx – high preference, xx – moderate preference, x – least preferred, 0 – not at all preferred. yy – abundant, yy – moderately available, y – scarce, z-not available at all

10. MONITORING PLAN

Forest Resources Monitoring Plan				
Objective	Indicator	How it will be monitored	Responsibility	Comments
Sustainable management of timber species	Timber harvested as per prescribed AAC in the CF management plan	Monitor from CFMG record of forest product utilization.	CFMG committee members	Marking to be done by LRO staff, as per AAC.
To enhance water sources of the CF	Protected and improved existing water source	Assess quality and quantity of water	CFMG members	Technical support form DoFPS
To protect forest resources from outsiders' intervention, illegal activities	No. of illegal case compounded	From the record of fines and compensation	CFMG executive members	LRO staff will support
Social and institutional Monitoring Plan				
Objective	Indicator	How it will be monitored	Responsibility	Comments
To enhance level of income at household level	Cash inflow into CF accounts	From the record CF budget maintained by treasurer	CFMG executive members	LRO staff should look after it during CF monitoring and evaluation.
Enhanced CFMG governance	No. of meeting conducted and level of participation of CFMG members in meetings, study tour and training	From the records maintained of CF activities	CFMG executive members and CFMG members	

Revised Community Forest Management Plan (April, 2023 – March, 2033)

Equitable distribution of CF benefits	Proportion of income and products from CF distributed to each household	From the record of maintained for benefit sharing.	CFMG executive members and CFMG members	
Environmental Monitoring Plan				
Objective	Indicator	How it will be monitored	Responsibility	Comments
Minimized loss of biodiversity	Presence of wild life	Report sighting of wild animals	CFMG members to report	LR Office to compile
Minimize forest degradation	Availability of forest produce	Adequate supply of forest products from CF	CFMG members report	
	No. of Forest fire incident	Forest fire record	CFMG members to monitor and report	

1. ANNUAL PLAN OF OPERATION FOR 10 YEARS

Location	Activity	Year										Responsibility
		1	2	3	4	5	6	7	8	9	10	
Zangkar	Boundary demarcation											CFMG and the Phawan Range staff
Zangkar	Clearing bushes nearby water sources											CF executive members to lead the work and all CFMG to participate
Zangkar	CFMG Meeting											All CFMG chaired by the chair person
Zangkar	Timber harvesting											Chair person, applicant and forestry in-charge
Zangkar	Book and record keeping training											Concern Ranger/ CF focal
Zangkar	Silviculture Training											

PART II: COMMUNITY FOREST BY-LAWS

Membership arrangements

1. The Changkala Lhabtsen Karmo Community Forest constitutes twenty-two members who are permanent residents of Changkala and Wayang villages.
2. Extension of Gung and Tharm from the current CF members shall be allowed to join the CFMG after payment of Nu. 1000/- (One thousand only). But the benefit shall be entitled irrespective of the number of year he/she have join as CFMG.
3. No CFMG members shall not allowed to withdraw from the CFMG unless cancellation of Gung and Thram from the community.

Management Committee formation

1. The CFMG management committee constitutes of three key members; Chairman, Secretary, Treasurer.
2. The CFMG management committee members will be elected from within the CFMG members during CF annual meeting through votes of majority.
3. The CFMG management committee members are not allowed to leave the post until the maturity of their term unless unavoidable.
4. The CFMG management committee members will be terminated from committee as well as from CFMG member without any benefit if he/she is found indulged in corruption.
5. The CFMG management committee shall continue to function unless removed from the post by the majority of the CFMG members.

Terms of Reference for CFMG Management Committee

1. Every member has right to become a management committee member unless he or she meets the following criteria:
 - He/she should be a legal member of the CFMG.
 - He/she should be able to read and write.
 - He/she should be above 18 and below 65 years of age.

2. The executive members are not allowed to withdraw from his/her post unless compelled due unavoidable circumstances without fine & penalties and shall remain as CFMG members.
3. He/she will be terminated in between if found ineffective or indulged in any act of corruption.
4. The amount embezzled should be refunded to the CF account within a period of two months from the date of notice of embezzlement and continuation of membership shall decide by CFMG members. If fails to abide by the rules, the case will be deal as pers existing legal procedures.

TOR of Chairperson

1. Ensure CF activities are implemented on time as prescribed in CFMPM.
2. Liaise between Government and CFMG.
3. Corresponds with various stakeholders and offices.
4. Accord approval or sanction the forest products to CFMG members.
5. Initiate, conduct and attend meetings representing the CF.
6. Resolve conflict, if any within community level.
7. Impose fines and penalties to defaulters.
8. Attend guests and visitors from outside who visit the community forest.
9. Shall countersign on forms for withdrawal of group fund form bank.
10. Identify and select the CF representatives/ nominations with other committee members for study tours, trainings and any other related to CF.

TOR of Secretary

1. Maintain updated and valid records of all activities of the CF and both timber and NWFP products.
2. Officiate as chairman and conduct meeting in absence of chairman. He can also sign cheques and withdraw CF fund on behalf of the Chairman.
3. Submit periodical progress and other CF related reports.
4. Minute all meetings related to CF management.

5. Identify and select CF representatives/ nominations with other committee members for study tours, trainings and any other related to CF.

TOR of Treasurer

1. Maintain all financial records.
2. Officiate as Chairman and Secretary in absence of the two.
3. Present financial statement/ report during CF annual meeting.
4. Collect and deposit the fees, fines and royalties in CF bank account.
5. Issue forest product collection permit.
6. All cheques regarding the financial transaction of CF have to be signed by the Chairman, Secretary and Accountant.
7. Identify and select CF representatives/ nominations with other committee members for study tours, trainings and any other related to CF.
8. Report financial obligations and statues to CFMG members.

Roles and Responsibilities of CFMG and CFMG members

1. Every member shall participate in every activity related to CF management.
2. Co-operate with CFMG management committee members in managing the CF.
3. Shoulder equal responsibilities in protecting CF area.
4. Attend CF meetings both annual and ad-hoc.
5. Maintain the concept of sustainability, equity and justice.
6. Accept or reject any CFMG management committee members.
7. Report any illegal activities inside CF either to CFMG committee member or concern forest official.
8. Proceed auditing of CF fund if necessary.
9. Render all necessary support to CFMG management committee at all time.

Fees, Fines and Penalties

Sl. No	Forest products/ Membership fees	Procedures	Fees (Nu.)
1	Membership	Membership fee annually	200/- per Hh.
2	Drashing	Allotment shall made as per the entitlement and ACC.	50/- per tree
3	Cham		30/- per tree
4	Tsim		6/- per tree
5	Dangchung		5/- per Dangchung
6	Fencing Poles	Quantity will be allotted as per the requirements.	5/- per post
7	Firewood	Not more than 2 truckloads per hh. Only death, diseased, malformed wood, lops and tops will use as fire wood. The demand which cold not meet from CF should meet from SRF.	15/- per TL
8	Flagpoles	Should follow Forest and Nature Conservation Rule and Regulation of Bhutan rural allotment procedures for availing the resources.	10/- per flagpole
15	Sale of timber to non-CFMG member	In accordance to the provisions of prevailing FNCRR and available marketing guidelines.	As per FNCRR and marketing guideline.
16	Sale of timber to CFMG members	70% below the latest market rate of NRDCL	To meet additional requirements
Note: Any provisions left out or uncovered in here shall be dealt according to the provisions of the existing Forest and Nature Conservation Act of Bhutan, Rules and Regulations and other guidelines provided under this Act from time to time.			

Timber Products	CFMG Members		Non CFMG members	
	Fees/penalties	Products	Fees/ penalties	Products
Drashing	10,000/- per tree	Seize	20,000/ per tree	Seize
Cham	2000/- per tree	Seize	10,000/ per tree	Seize
Tsim	500/- per tree	Seize	5000/ per tree	Seize
Dangchung	500/- per tree	Seize	1000/ per tree	Seize
Fencing Poles	300/- per tree	Seize	500/ per tree	Seize
Firewood	1000/- per tree	Seize	5000/ per tree	Seize
Flagpoles	100/- tree	Seize	500/- per tree	Seize
NWFPs (Any)	500/- per load	Seize	1000/- per load	Seize
Hunting, illegal poaching, traps	500/- per instance		5000/- instance	
Forest Fire	Nu. 50/acre	Not applicable	Nu. 500/acre	Not applicable

Waste disposal in CF		Not applicable		Not applicable
Damage to plantation by cattle	Nu. 10/seedlings Shall be made to replant the damaged sapling/seedlings.	Not applicable	Nu. 20/seedlings Shall be made to replan the damaged sapling/seedlings	Not applicable
Miss use of CF fund	Offender shall made to pay double the amount missed used and continuation of membership will decide by CFMG members.	Not applicable	Not applicable	Not applicable
Absent during work	Nu. 400/ per day			
Absent during meeting and labour contribution	Nu. 300/ per day			
Note: Any provisions left out or uncovered in here shall be dealt according to the provisions of the existing Forest and Nature Conservation Act of Bhutan, Rules and Regulations and other guidelines provided under this Act from time to time.				

Managing CFMG fund and credit

1. The CFMG shall open saving accounts in the bank with a joint signatory of chairman, secretary and treasurer.
2. Initial contribution of Nu. 200/- per member annually as membership fee.
3. Membership Fees, Entry fees for new members, Visitors fees, Donations, collection of fines and penalties, collection of royalties are potential sources of CF fund.
4. Fund generated from CF must deposited in the bank account (BDBL) operated for the Changkala Lhabtsen Karmo Community Forest
5. For community development activities only 20% of CF fund can be used.
6. Accountant/ treasurer shall keep record of detail fund information of CF fund and share to the CFMG members in CF meetings.

7. Any CF member attaining training, workshop, meeting and other works related to the CF, shall paid Nu. 300/ day as Dailly Allowance (DA) within CF area and Nu. 500/day outside CF area as TA and DA only if the organizer agency doesn't pay them.
8. The CFMG members can avail loan amount not more than Nu. 50,000 at interest rate of 5% monthly for a term of one year.
9. If the CF account balance is less than Nu. 50,000 the loan amount should not exceed 50% of a total amount.
10. The amount should refund within a year. If one fails to refund on due date, even a single day delay must pay additional one more year's interest rate in addition to principal amount and the interest rate of the previous year. However, the CFMG members shall verify the delay in repayment and must consider if the reason is obligatory one.

Benefit Sharing Mechanism

1. All CF member has the rights to any forest product from CF. However, they need to obtain valid permits from Chairman and trees have to be marked before felling.
2. Allotment of timber and other non-wood forest produces will be allotted as per the genuineness of CFMG members and it shall decide by the presence of all CFMG members.
3. All forest products shall be shared among CFMG members as per needs and requirements.
4. The individual allotment shall be strictly for rural use and sale of such products are strictly prohibited.
5. Timbers for renovation of community Lhakhangs, schools, and outreach clinic will be free of royalty provided that it falls inside the community and is the responsibility of community.
6. Excess timbers from the CF members will be sold in the name of CF but with appropriate compensation to the beneficiary.
7. The timbers for victims of natural disaster shall be provided free of royalty.
8. CFMG members are allowed to collect dry fuel wood (lops and tops only) from the CF area as and when required, irrespective of the quantity without royalty.
9. Outsiders and Non-members are not allowed to collect any types of forest resources from the designated CF.

10. All CFMG members have traditional grazing rights in the CF but are restricted from entering the plantation sites if any.
11. The CFMG members irrespective of all wealth groups will equally contribute the labour for activities related to CF management.
12. CFMG members are liable for prescribed royalty for commercial NWFPs (if any) collection.

Meetings

1. The CFMG will conduct at least two meetings in a year.
2. All issues related to CF planning, implementation and monitoring will be discussed.
3. Discuss and review activities implemented in past one year.
4. No members shall miss any of the meetings or CF related activities.
5. However, unavoidable circumstances such as demise, sick and attending other important works related to legal issues shall be considered.

Conflict Management

1. The CFMG management committee members shall resolve any conflict relating CF.
2. The case shall be forward to Gewog Administration if the committee members are not in position to resolve.
3. The conflict still unresolved shall be forwarded to concern Forestry Office for solution.
4. Unresolved shall then be forward to Royal Court of Justice.

Amendment of CFMP and by-laws

1. Community Forestry Management Plan (CFMP) period shall be for a period of 10 years.
2. Amendments may be initiated if there arise any important issues that require major changes.
3. The CFMG management committee members shall ensure to inform Forestry Office on any amendment of CFMP.
4. Amendment shall be done any year within the 10 years plan period with prior permission from the Department (DoFPS).

5. CFMG and Forestry Office shall submit detail report about the amendments of CFMP to the Department.

Powers of the Department

1. The department shall provide constant advice, conducive to policy frameworks and technical support.
2. The department shall evaluate performance of the CF and assess in terms of their activity implementation as per prevailing FNCRR and CFMP.
3. The department shall intervene if there are any diversion and negligence by the CFMG.
4. The department may question the CFMG pertaining to CF and ask for reports and data periodically.
5. If CFMG grossly mismanage the CF as a whole, it is in the ultimate power of the Department to terminate and revert back the CF to SRF land.
6. This shall include revoking the CF certificates, Management Plan, Marking, Passing Hammers and all documents of the CF.
7. The influence and control over minerals, endangered flora and fauna species shall lie with the Department inline to the prevailing rules and regulations over times.
8. Any provisions not covered within this CF by-law shall invite the Department to exercise its power in accordance to the prevailing ACT and FNCRR of Bhutan.

ANNEXURE

Annex 1: Approval sheet (last plan)

Approval Sheet

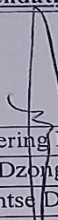
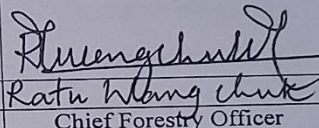
Name of the CF	Changkhal Lhabsen Karmo Community Forest
Chewogs	Changkhal
Gewog	Jarey
Dzongkhag	Lhuentse
Total Community Forests Area (Ha)	160 acres (64.8ha)
Total CFMG member (HH)	17 households

16

Prepared and submitted for approval

Agencies	Community Forestry Representative	Gewog Forestry Representative	Territorial/Parks Representative	Gewog Tshogdu	Dzongkhag Forestry Representative
Signature					
Name	Kelzang Dorji	Lungten Tshering	Kelzang Drukpa	Kinzang Minjur	Sonam Gyeltshen
Title	CF Chairman	Gewog Forest Ranger	Park Range Office, Phowan, TNP	Gup, Jarey Gewog	Dzongkhag Forestry Officer

Administrative and Technical Recommendations

		
Name	Tshering Keizang	Ratna Wangchuk
Title	Dzongdag	Chief Forestry Officer
Dzongkhag/Divisions	Lhuentse Dzongkhag	Thrumingla National Park

Director General

Department of Forests and Parks Services

SFED / SFS / 2-2 (A) / 2013 / 655 dated 4/4/13

Annex 2: CFMG member list

CFMG member list						
Sl. No	Name	CID No.	Gung	Thram	Chewogs	Signature/Thump impression
1	Ugyen Tshomo	10602000001	Chha-2-199	242	Changkala	
2	Kezang Tshering	10602001322	Chha-2-37	229	Changkala	
3	Jangchuk Dema	10602000106	Chha-2-33	249	Changkala	
4	Kinley Seldon	10602000056	Chha-2-219	258	Changkala	
5	Delma Mo	10602001286	Chha-2-24	195	Wayang	
6	Tsewang Lhamo	10602000045	Chha-2-28	117	Changkala	
7	Kezang Tenzin	10602000037	Chha-2-27	118	Changkala	
8	Deki Choden	10602000021	Chha-2-26	167	Changkala	
9	Deki Yangzom	10602000065	Chha-2-29	116	Changkala	
10	Dorji Dema	10692001250	Chha-2-21	162	Changkala	
11	Dechen Peldon	10602000091	Chha-2-31	14	Changkala	
12	Pema Tshomo	10602000071	Chha-2-30	13	Changkala	
13	Sither Tsewang	10602001311	Chha-2-35	246	Changkala	
14	Nima Mo	11204001445	Chha-2-23	244	Wayang	
15	Yeshey Choden	10602001270	Chha-2-22	163	Wayang	
16	Chimi Rinzin	10602001273	Chha-2-22	163	Wayang	
17	Pema Zangmo	10602000094	Chha-2-31	14	Changkala	
18	Tashi Yangzom	10602000014	Chha-2-25	116	Wayang	
19	Tobgay	10602000013	Chha-2-Nill/3	254	Changkala	
20	Tshering Choki	10602001298	Chha-2-34	168	Wayang	
21	Tshering Yangdon	10602001330	Chha-2-210	247	Wayang	
22	Tshering Zangmo	10602001246	Chha-2-198	164	Wayang	

23 Sonam Tshomo 10602001319 Chha-2-36 237 Wayang.

-Wayang -

Annex 3: Forest resource assessment compilation sheet

Format 4: Quantitative Forest Resource Assessment COMPILATION SHEET (Broad leaf, timber)								
Name of CF: Changkala Labtsen Karmo								
Block name: Changkala					Block area: 64.035 ha (Production area)			
Number of Plots: 44					Compiling date: 28/3/2023			
<i>col1</i>	<i>col2</i>	<i>col3</i> (3 decimals)	<i>col4</i> (3 decimals)	<i>col5</i> (3 decimals)	<i>col6</i> (0 decimals)	<i>col7</i> (2 decimals)	<i>col8</i> (2 decimals)	<i>col9</i> (2 decimals)
dbh class (cm)	basal area (m ²)	class volume (m ³)	plot size (ha)	expansion factor	Tally	nrha (stems/ha)	basha (m ² /ha)	volha (m ³ /ha)
10-19	0.017	0.073	0.05	0.455	1	0.45	0.01	0.03
20-29	0.047	0.265	0.05	0.455	26	11.82	0.56	3.13
30-39	0.093	0.627	0.05	0.455	42	19.09	1.78	11.97
40-49	0.156	1.202	0.05	0.455	42	19.09	2.98	22.95
50-59	0.233	2.021	0.05	0.455	28	12.73	2.97	25.72
60-69	0.327	3.139	0.05	0.455	15	6.82	2.23	21.40
70-79	0.436	4.518	0.05	0.455	4	1.82	0.79	8.21
80-89	0.561	6.252	0.05	0.455	2	0.91	0.51	5.68
90-99	0.701	8.346	0.05	0.455	2	0.91	0.64	7.59
100-109	0.858	10.824	0.05	0.455	0	0.00	0.00	0.00
110-119	1.030	13.709	0.05	0.455	0	0.00	0.00	0.00
120-129	1.217							
Sum for all dbh classes						73.64	12.45	106.69
Explanation:								
<i>col3</i>	: look up in volume table, for given species group and dbh class				<i>col6</i>	: count and fill in		
<i>col4</i>	: plot size for given dbh class				<i>col7</i>	: col5*col6		
<i>col5</i>	: (1/col4)/ (nr. Of plots)				<i>col8</i>	: col7*col2		
					<i>Col9</i>	: col7*col3		
(When rounding: round to the nearest EVEN digit, e.g., 0.635 to 0.64 but 0.665 to 0.66)								

Revised Community Forest Management Plan (April, 2023 – March, 2033)

Format 4: Quantitative Forest Resource Assessment COMPILATION SHEET (Broad leaf, non-timber)								
Name of CF: Changkala Labtsen Karmo								
Block name: Changkala					Block area: 64.035 ha (Production area)			
Number of Plots: 44					Compiling date: 28/3/2023			
<i>col1</i>	<i>col2</i>	<i>col3</i> (3 decimals)	<i>col4</i> (3 decimals)	<i>col5</i> (3 decimals)	<i>col6</i> (0 decimals)	<i>col7</i> (2 decimals)	<i>col8</i> (2 decimals)	<i>col9</i> (2 decimals)
dbh class (cm)	basal area (m ²)	class volume (m ³)	plot size (ha)	expansion factor	Tally	nrha (stems/ha)	basha (m ² /ha)	volha (m ³ /ha)
10-19	0.017	0.07	0.05	0.45	20.00	9.09	0.15	0.66
20-29	0.047	0.27	0.05	0.45	29.00	13.18	0.62	3.49
30-39	0.093	0.63	0.05	0.45	45.00	20.45	1.90	12.83
40-49	0.156	1.20	0.05	0.45	56.00	25.45	3.97	30.60
50-59	0.233	2.02	0.05	0.45	35.00	15.91	3.71	32.15
60-69	0.327	3.14	0.05	0.45	6.00	2.73	0.89	8.56
70-79	0.436	4.52	0.05	0.45	3.00	1.36	0.59	6.16
80-89	0.561	6.25	0.05	0.45	0.00	0.00	0.00	0.00
90-99	0.701	8.35	0.05	0.45	0.00	0.00	0.00	0.00
100-109	0.858	10.82	0.05	0.45	1.00	0.45	0.39	4.92
110-119	1.030	13.71	0.05	0.45	1.00	0.45	0.47	6.23
120-129	1.217							
Sum for all dbh classes						89.09	12.70	105.60
Explanation:								
<i>col3</i>	: look up in volume table, for given species group and dbh class				<i>col6</i>	: count and fill in		
<i>col4</i>	: plot size for given dbh class				<i>col7</i>	: col5*col6		
<i>col5</i>	: (1/col4)/ (nr. Of plots)				<i>col8</i>	: col7*col2		
					<i>Col9</i>	: col7*col3		
(When rounding: round to the nearest EVEN digit, e.g., 0.635 to 0.64 but 0.665 to 0.66)								

Annex 4: Stand & stock table: Number of Trees

FORMAT 5: STAND & STOCK TABLE SHEET 1 - NUMBER OF TREES (Timber)													
1. Name of CF: Changkala Labtsen Karmo													
2. Species Group: Broadleaved													
3. No of Plot: 44													
4. Block Name: Changkala								(Report all values to 2 decimals)					
5. Estimated parameter: Average Number of Trees per Ha													
Dbh class (cm)													
Species group	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	total	%
Broadleaf	0.45	11.82	19.09	19.09	12.73	6.82	1.82	0.91	0.91	0.00	0.00		
Michelia	0	0.45	0.45	0.91	0.91	0	0.45	0	0				
Total broad leaf	0.45	12.27	19.55	20.00	13.64	6.82	2.27	0.91	0.91	0.00	0.00		
total all species	0.45	12.27	19.55	20.00	13.64	6.82	2.27	0.91	0.91	0.00	0.00	76.82	
%	0.59	15.98	25.44	26.04	17.75	8.88	2.96	1.18	1.18	0.00	0.00		100

FORMAT 5: STAND & STOCK TABLE SHEET 1 - NUMBER OF TREES (Non-timber)													
1. Name of CF: Changkala Lhabtsen Karmo													
2. Species Group: Broadleaved													
3. No of Plot: 44													
4. Block Name: Changkala						(Report all values to 2 decimals)							
5. Estimated parameter: Average Number of Trees per Ha													
	Dbh class (cm)												
Species group	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	total	%
Broadleaf	9.09	13.18	20.45	25.45	15.91	2.73	1.36	0.00	0.00	0.45	0.45		
Total broadleaf	9.09	13.18	20.45	25.45	15.91	2.73	1.36	0.00	0.00	0.45	0.45		
total all species	9.09	13.18	20.45	25.45	15.91	2.73	1.36	0.00	0.00	0.45	0.45	89.09	
%	10.20	14.80	22.96	28.57	17.86	3.06	1.53	0.00	0.00	0.51	0.51		100

Annex 5: Stand & stock table: Basal area

FORMAT 6: STAND & STOCK TABLE SHEET 2 - BASAL AREA												
1. Name of CF: Changkala Labtsen Karmo												
2. Species Group: Broadleaved												
3. No of plots: 44												
3. Name of Block: Changkala												
4. estimated parameter: Average Basal Area per Ha (m2/ha)									<i>(Report all values to 2 decimals)</i>			
<i>Dbh class (cm)</i>												
Species group	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	total
Broadleaf (timber)	0.01	0.56	1.78	2.98	2.97	2.23	0.79	0.51	0.64	0.00	0.00	
Broadleaf (non-timber)	0.15	0.62	1.90	3.97	3.71	0.89	0.59	0.00	0.00	0.39	0.47	
Michelia	0.00	0.02	0.04	0.14	0.21	0.00	0.20	0.00	0.00			
Total broadleaf												
Total all species	0.16	1.20	3.72	7.09	6.88	3.12	1.59	0.51	0.64	0.39	0.47	25.77
%	0.63	4.64	14.44	27.52	26.72	12.11	6.15	1.98	2.47	1.51	1.82	100

Annex 6: Stand & stock table: Volume

FORMAT 7: STAND & STOCK TABLE SHEET 3 – VOLUME(Timber)												
1. Name of CF: Chankala Lhabtsen Karmo												
2. Species Group: Broadleaved												
3. No of plots: 44												
3. Name of Block: Changkala												
4. Estimated parameter: Average Volume per Ha (m3/ha)										(Report all values to 2 decimals)		
Dbh class (cm)												
Species group	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	total	%
Broad leaf	0.03	3.13	11.97	22.95	25.72	21.40	8.21	5.68	7.59			
Michelia	0.00	0.14	0.31	1.14	1.88	0.00	2.02	0.00	0.00			
Total broadleaf												
total all species	0.03	3.27	12.28	24.09	27.60	21.40	10.24	5.68	7.59		112.15	
%	0.03	2.91	10.95	21.48	24.61	19.08	9.13	5.07	6.77			100

FORMAT 7: STAND & STOCK TABLE SHEET 3 – VOLUME (Non-timber)												
1. Name of CF: Chankala Lhabtsen Karmo												
2. Species Group: Chirpine												
3. No of plots: 44												
3. Name of Block: Changkala												
4. Estimated parameter: Average Volume per Ha (m3/ha)										(Report all values to 2 decimals)		
Dbh class (cm)												
Species group	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	Total
Broad leaf	0.66	3.49	12.83	30.60	32.15	8.56	6.16	0.00	0.00	4.92	6.23	
Total broadleaf												
total all species	0.66	3.49	12.83	30.60	32.15	8.56	6.16	0.00	0.00	4.92	6.23	105.60
%	0.63	3.31	12.14	28.97	30.45	8.11	5.83	0.00	0.00	4.66	5.90	100

Annex 7: CF sample plot coordinates

Plot Id	Latitude E	Longitude N	Plot Id	Latitude E	Longitude N
1	91.15389252	27.48760414	26	91.14787292	27.49198532
2	91.15511322	27.4875946	27	91.149086	27.49197578
3	91.15632629	27.48758507	28	91.15029907	27.49196625
4	91.15148163	27.4887085	29	91.15151215	27.4919548
5	91.1526947	27.48869705	30	91.15272522	27.49194527
6	91.15390778	27.48868752	31	91.15393829	27.49193573
7	91.15512085	27.48867798	32	91.14666748	27.49307823
8	91.15633392	27.48866653	33	91.14788055	27.4930687
9	91.14663696	27.48983002	34	91.14909363	27.49305916
10	91.14785004	27.48982048	35	91.1503067	27.49304771
11	91.14906311	27.48981094	36	91.1515274	27.49303818
12	91.15027618	27.4897995	37	91.15274048	27.49302864
13	91.15148926	27.48978996	38	91.15395355	27.4930191
14	91.15270233	27.48978043	39	91.15032196	27.49413109
15	91.15391541	27.48977089	40	91.15153503	27.49412155
16	91.15512848	27.48975945	41	91.15274811	27.49411201
17	91.15634918	27.48974991	42	91.15396118	27.49410057
18	91.14543152	27.49092293	43	91.15154266	27.49520302
19	91.14664459	27.49091339	44	91.15276337	27.49519348
20	91.14785767	27.49090385			
21	91.14907074	27.49089241			
22	91.15028381	27.49088287			
23	91.15150452	27.49087334			
24	91.15271759	27.4908638			
25	91.15393066	27.49085236			