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# ***TADONGCHEN COMMUNITY FOREST MANAGEMENT PLAN (1<sup>st</sup> REVISION)***

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***Menji Gewog, Lhuentse Dzongkhag  
Divisional Forests Office, Mongar  
Plan Period: 2023-2033***

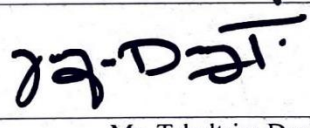
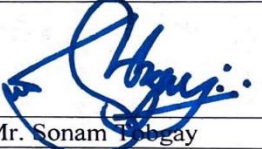
# APPROVAL SHEET FOR COMMUNITY FOREST MANAGEMENT PLAN

Name of Community Forest	Tadongchen Community Forest
Village	Minjey, Tongling, Wangshing
Chiwo	Wangshing Minjey
Gewog	Minjey
Dzongkhag	Lhuentse
Production area (ha)	334.06
Protection area (ha)	89.76
Total Community Forest area	425.17
Total CFMG member (No. of HH)	83

Prepared and Submitted for Approval

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Signature						
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REVIEWED and RECOMMENDED FOR APPROVAL

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Division/Section	Forest Resources Planning and Implementation Section	Forest Resources Planning and Management Division

Approved by



Director

Department of Forests and Park Services

Approved vide Notesheet No.DoFPS/FRPMD/FRPIS/CF\_1(C)/2022-2023/1186 on dated June 13, 2023

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## 1. ACRONYMS & GLOSSARY

AAC	Annual Allowable Cut
CF	Community Forest
CFMC	Community Forest Management Committee
CFMG	Community Forest Management Group
CFMP	Community Forest Management Plan
CFO	Chief Forestry Officer
DBH	Diameter at Breast Height
DFO	Divisional Forests Office
FNCRR	Forest and Nature Conservation Rules and Regulations
Ha	Hectare
H/h	Household
Nu	Ngultrum
N trees	Trees that are not suitable for using timbers
NWFP	Non Wood Forest Product
RGoB	Royal Government of Bhutan
RO	Range Officer
SRFL	State Reserve Forests Land
T Trees	Trees that are suitable for timbers

Cham	Beam/rafter
Dangchung	Poles
Drashing	Trees above 4' girth
Dzongkhag	District
Gewog	Block
Gup	Elected head of the Block
Resoop	Forest watcher
Tsim	Roof strut



## 2. EXECUTIVE SUMMARY

Menji-Wangzhing is one of the chiwog under Menji Gewog, and it consists of three villages namely Menji, Tongling and Wangzhing. Tadongchen Community Forest is located above Tongling village and the farm road to Zham village passes through lower part of the community forest area. The irrigation channel of these three villages also passes through the heart of the CF area.

The Community Forest Management Group (CFMG) consists of 88 households from these three villages in last plan period. Tadongchen Community Forest Management Plan expired in February, 2022 and the CFMG has applied for plan revision as the members are interested to manage the CF area. The CF has 83 households (Hhs) forming Tadongchen Community Forest Management Group to manage the 425.17 hectares of CF area for next 10 years. The sustainable utilization and management of forest resources including protection from the illegal collectors are the primary aims for the establishing Community Forest.

The main forest cover is cool broadleaved forest with mixed species of trees and understory vegetation of small bamboos and ferns. The dominant tree species includes Phangkhebshing (*Quercus lamellosa*), Walnut (*Juglans regia*), Praguli (*Persea spp*), Ngangnashing (*Michelia spp*), Serkalingshing (*Acer spp*), Sumashing (*Cinamomum spp*). The general condition of forest is moderate with few mature hard wood trees with very low and few or no natural regeneration at all. The CF management goals and objectives are as follows:

- ✓ *To ensure sustainable utilization and management of forest resources.*
- ✓ *To protect and improve water sources and environment conservation.*
- ✓ *To generate income through the sale of surplus products for improvement of livelihoods of the communities in future.*

Tadongchen CF has sufficient timber with AAC of 381.71 m<sup>3</sup> (218 nos) Drashing. The forest produces such as Dangchung 2.89m<sup>3</sup> (72 nos), Tsim 6.62 m<sup>3</sup> (66nos), Cham 50.44m<sup>3</sup> (168 nos), Firewood 731.8m<sup>3</sup> (505) which meets the demand of the CFMG members. For bamboos and other forest product which are not available within the CF area, the CFMG will remain dependent on the State Reserved Forest Land (SFRL) through the permit system as usual. The main tasks of the Community Forest Management Group are to carryout plantation with valuable timber species within the degraded CF areas and to protect from illegal activities.

## PART A: MANAGEMENT PLAN

### 3. INTRODUCTION

The Tadongchen Community Forest is located above the Tongling village of Menji Gewog, under Lhuentse Dzongkhag (figure 2). The CFMG members are from three villages (Minjey, Tongling and Wangzhing) before the expiry of the plan. During the plan revision, six members has to withdraw as five members are from other chewog and they are member of other CF in different chewog. One member is gungtong. Four new households have joined the group and now the CFMG consists of 88 households.

The total area of Community Forest (CF) is about 425.17 ha. All the 83 hhs of these villages will be the Tadongchen Community Forest Management Group members. In last 10 years of CF management, group has generated fund of Nu.6,58,512/- (six lakh fifty-eight thousand and twelve only) through sales of surplus timber including fines, membership fee collections and fees collected for stones through surface collection.

The CFMG manage the CF sustainably for the first ten years plan period and carried out plantation in barren areas and protected from the outsider. The main forest cover is cool broadleaved with understory vegetation of bamboo and fern. The dominant tree species includes such as Phangkhebshing (*Quercus lamellosa*), Praguli (*Persea* spp), Ngangnashing (*Michelia* spp), Serkalingshing (*Acer* spp), Sumashing (*Cinamomon* spp). The CF site is located about twenty to thirty minutes' walk from the settlement and lies at an altitude of 1950 masl.

People in these village depends on forest products like; timber for construction purpose, fuel wood, fencing post, flag poles and NWFPs to meet their daily requirement. However, with the easy access to farm road and increase in population, community lost huge forest resources to illegal loggers and increase demand from outsiders. Hence, to protect and manage the forest area on sustainable basis to meet the resources requirement for their future generation, these three communities decided to form CFMG and established CF.

The forest type is comprised of 100% cool broad-leaved forest and the dominant tree species includes *Quercus lamellosa*, *Juglans regia*, *Persea* spp, *Michelia* spp, *Acer* spp, *Cinamomum* spp, etc. The CF area also has NWFPs such as ferns, mushroom, Daphne, Elatostema and small bamboos. Some of the common wild animals found are wild pig, deer, sambar, monkey, porcupine, bear, great barbet, etc. The average basal area of the CF is 13.48m<sup>3</sup> for T Trees and 17.64m<sup>3</sup> for N trees. The AAC of the CF is 1179.62 m<sup>3</sup>.



This management plan has been drawn upon series of meetings, planning sessions and field inventory with the local community of Menji, Tongling and Wangzhing to implement the activities that will help improve the health and vitality of forest, improve stand and stock of timber and NWFPs and most importantly to use the resources judiciously and on sustainable basis. This Management Plan is for ten years and shall be reviewed towards the mid of the tenth year.

The CFMG managed the CF as per the set operation time line, prescribed management activities and agreed upon By-Laws for last 10 years. They have carried out 2 acres plantations within ten years period and ensured area being protected from illegal goers. The group have generated fund from the sales of timber within the CF areas including annual membership fees collection and fines and penalty.

The Lhuentse Range under Divisional Forests Office, Mongar took a lead role in management plan revision. The activities include, CF boundary demarcation and resources assessment jointly with the CFMG members. Accordingly, CF By-Laws are drawn after detailed consultation with the CFMG which area oriented for sustainable management resources, greater participation of communities in decision making and entrusted with accountability if failed to abide by the set rules.

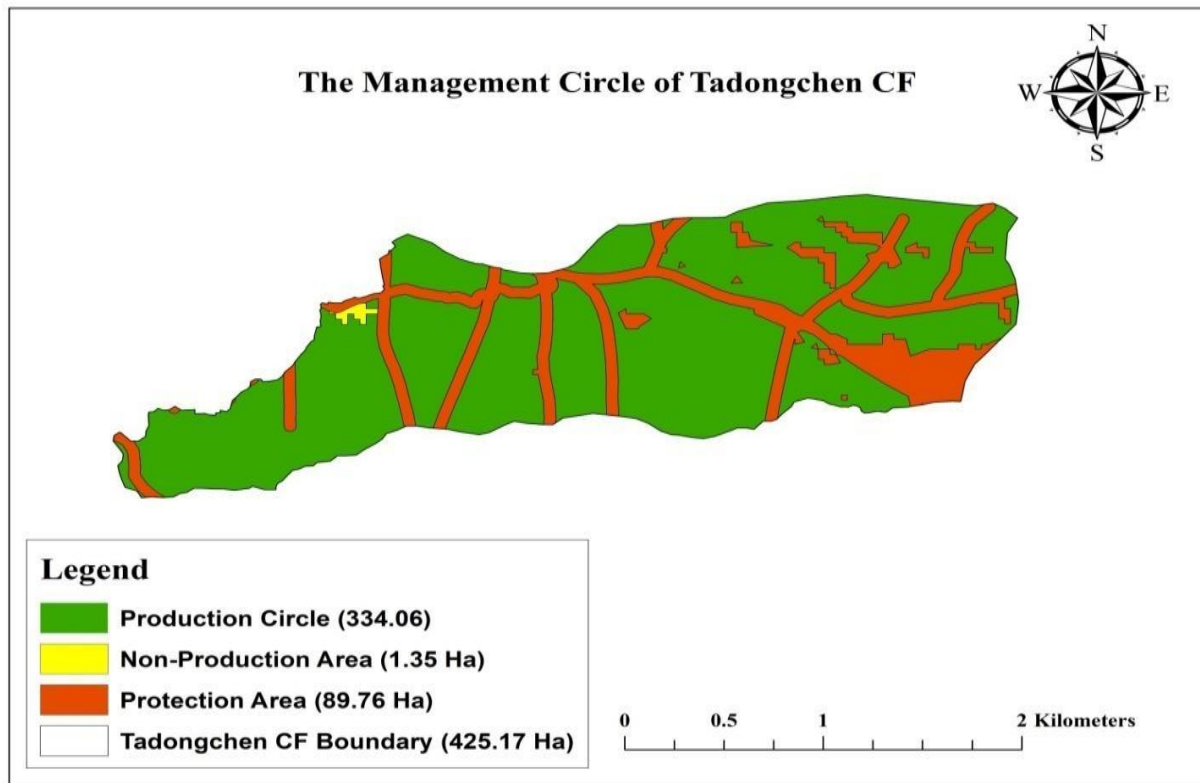
#### **4. TOTAL COMMUNITY FOREST AREA**

The Tadongchen CF has a total area of 425.17 ha equivalent to 1050.16 acres of SRF land with the details of designated areas as provided in the table below:

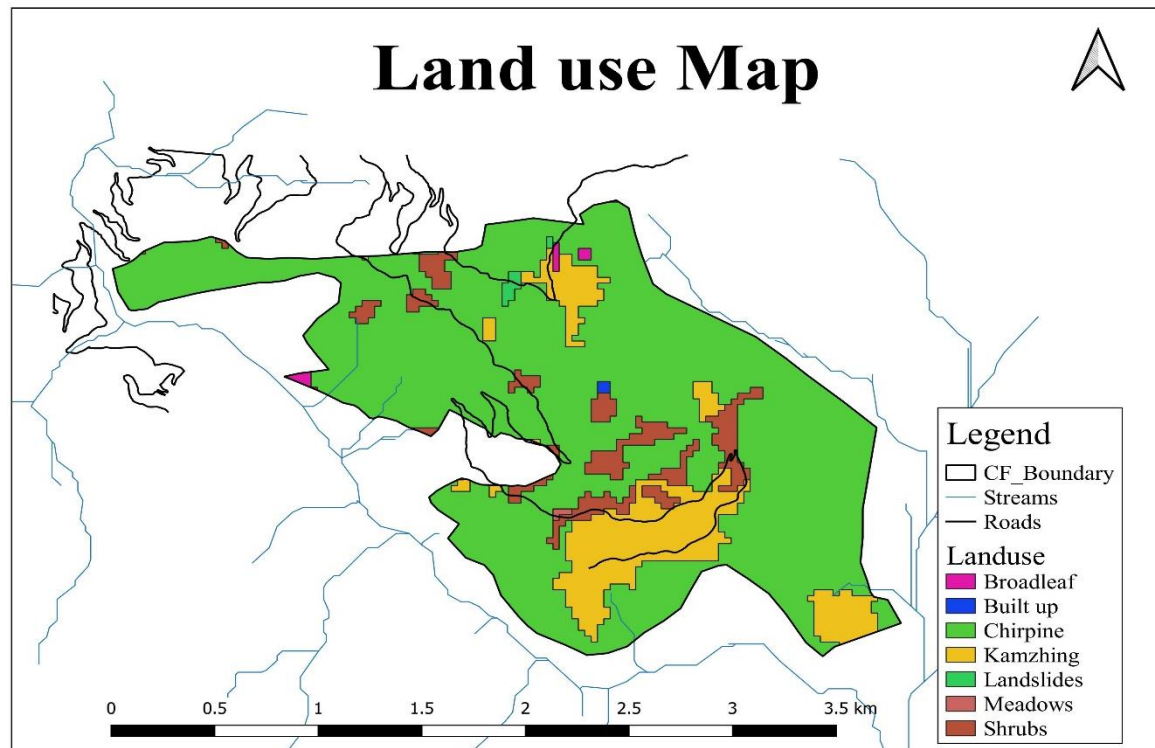
<b>Sl. No</b>	<b>Block</b>	<b>Area (Ha)</b>	<b>Remarks</b>
<b>1</b>	Production area	334.06	Net operable area
<b>2</b>	Protection area	89.76	Farm road & stream buffers
<b>3</b>	Non-Production area	1.35	
	<b>Total</b>	<b>425.17</b>	

## 5. COMMUNITY FOREST MAP

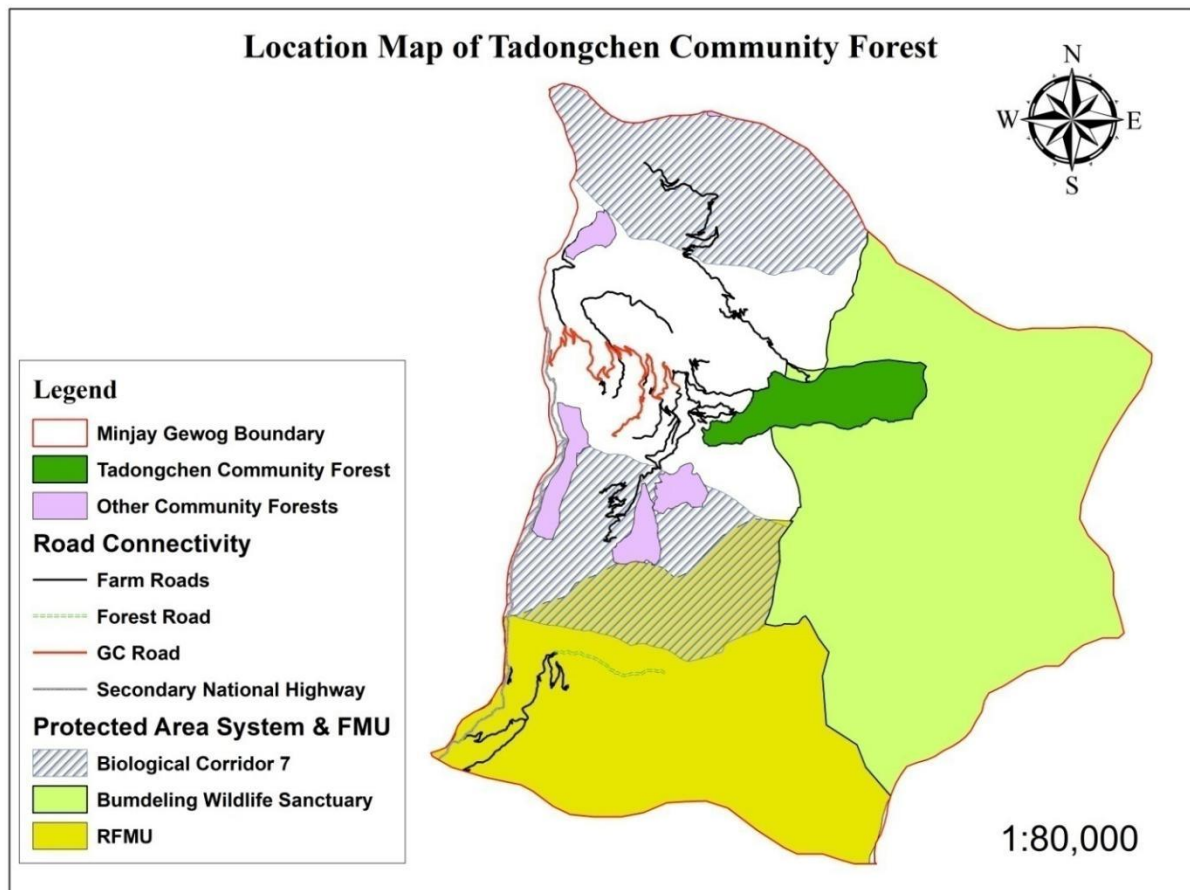
### 5.1 Map of the CF



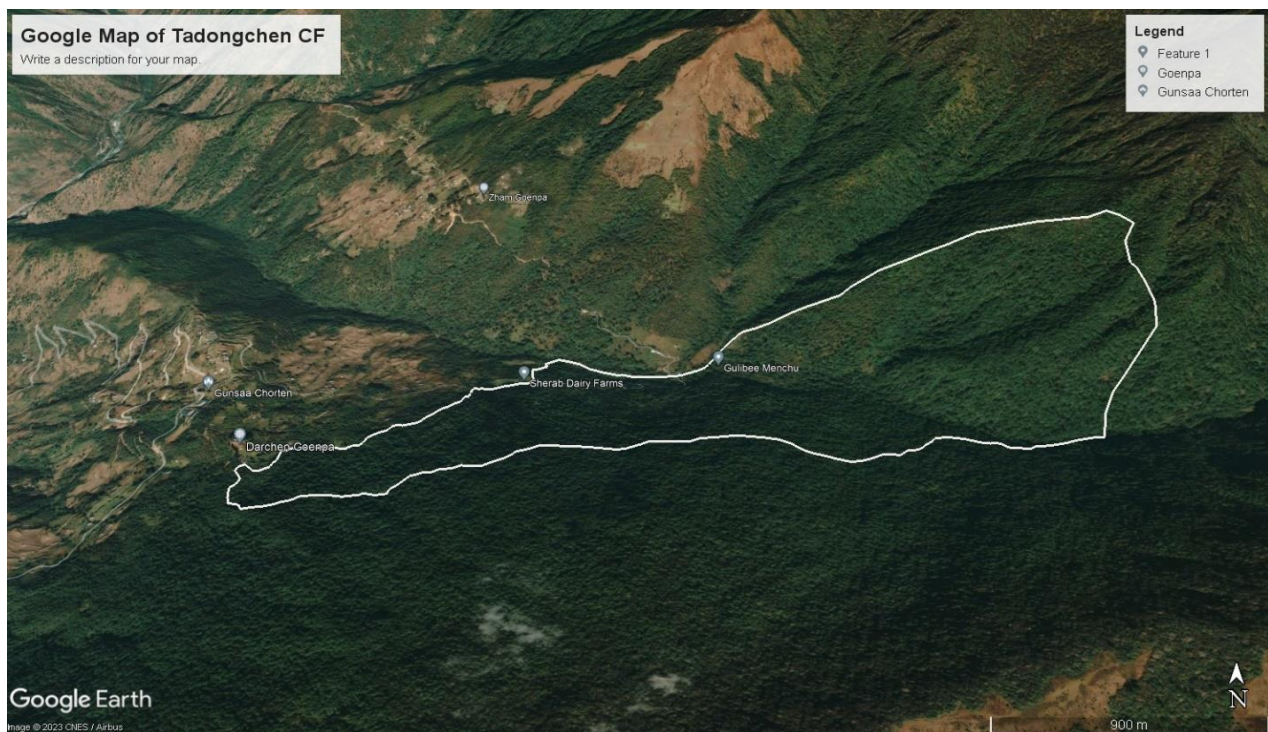
### 5.2 Land Use Map



### 5.3 CF Location Map



### 5.4 Google Map of Tadongchen CF



## 6. COMMUNITY FOREST BOUNDARIES

Boundaries	Description of permanent features
West	Darchenpam village and Menji - Tashiyangtse foot path.
East	Narchu stream and Zham farm road bridge
South	Pemi, Chupeg Badeb and old irrigation channel.
North	Tongling village, Gangkhadung brangsa and forest boundary pillar.

## 7. SOCIAL INFORMATION

	Descriptions
Name of the village	Menji, Tongling and Wangzhing
Ethnic groups with CFMG	No Ethnic groups were present; however, they are closely interlinked with each other
Basic amenities	1 Central School, BHU, RNR Center, NFE Center & 2 Community Lhakhangs.
Total household (HH) number of CFMG	83 households from the three villages from Minjey, Tongling and from Wangshing.
Population of CFMG	313 Numbers from Minjay, Tongling and from Wangshing villages.
% male and % female	145 nos male and 168 nos female
Main source of income	866 heads of cattle including local breed, Mithun cross & Jersey cross)
Cattle population of CFMG	Paddy, maize, potatoes, and vegetables
Main crops	Mixed farming with maize cultivation in dry land followed by paddy in wetland
Cropping pattern	Good housing with CGI roofing, good number of cattle and land holding with more labour force to work.
If any add:	48 hhs, (10hhs poor)
Average annual income from Farming	Nu.10000 - 30000/year

## 8. FOREST INFORMATION (WHOLE FOREST)

### 8.1 History of the Forests

As per elderly people living in this area, the communities have close and harmonious interface with the forest and its resources for time immemorial. Forest provides them with all their necessary requirement which includes grazing for cattle, water for drinking and irrigation, timber for constructions, fuel wood for home consumption and NWFPs. In return the communities protect the forest from over exploitation of its natural resources including both flora and fauna. However, with increase population and its demands for construction or industrialization over the time, the elderly people live through transition of huge drastic changes that over exploit Mother nature's resources. Poaching of wild animals, illegal logging and felling, and over grazing were some causative effects for rapid decrease in resources. With establishment of this CF they could reserve the changes from determined to positive and could able to meet their demand sustainably over last ten years.

### 8.2 Block Information

<b>Format 1. Forest Resource Assessment Format</b> (Complete this format for each block)	
Name of Community Forest	Tadongchen Community Forest
Date of Assessment	05/03/2022
Name of block	Tadongchen
Block area	425.17 Hectare
Name of recorder	Dotu, FR. II, Gyeltshen, FR - I, Tenzin Wangpo, FR - I, Ngawang & Tenzin, Sr.Fr.

<b>Forest &amp; Habitat Type</b> (tick all those present, refer definition below)			
Forest <input type="checkbox"/>	Thicket/pole stage <input checked="" type="checkbox"/>	Shrub land <input type="checkbox"/>	
Grassland <input type="checkbox"/>	Plantation <input type="checkbox"/>	Other <input type="checkbox"/>	
Vegetation type			
Subtropical forest <input type="checkbox"/>	Chirpine forest <input type="checkbox"/>	Warm broadleaved forest <input type="checkbox"/>	Bluepine forest <input type="checkbox"/>
Cool Broadleaved Forest <input checked="" type="checkbox"/>	Mixed <input type="checkbox"/>	Fir forest <input type="checkbox"/>	Other <input type="checkbox"/>

<b>Definitions</b>	
Broadleaf forest	75 % or more of the tree species present are hard woods
Conifer forest	75 % more or less of the tree species present are coniferous

Mixed forest	All other combinations of tree species
Mature Forest	Vegetation dominated by mature trees (trees > 40cm dbh)
Thicket/pole	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 < 3m 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
Regeneration	Seedlings, saplings and coppice re-growth of naturally occurring tree species that are less than 1.3 meters 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
Serkalingshing	<i>Acer</i> spp
Sumashing	<i>Cinamomum</i> spp
Praguleshing	<i>Persea</i> spp
Fangkheyshing	<i>Quercus</i> spp

**Plantation**

Is there any plantation?	Yes <input checked="" type="checkbox"/>	Approximate height
	No <input type="checkbox"/>	Of planted trees (m)
Year planted: 2 sites	Is the plantation?	Under stocked <input checked="" type="checkbox"/>
		Stocked <input type="checkbox"/>
		Overstocked <input type="checkbox"/>

**Forest Condition – Age**

Mature <input type="checkbox"/>	Pole stage <input checked="" type="checkbox"/>	Shrub land <input type="checkbox"/>	Any <input type="checkbox"/>
Main canopy of mature trees	Main canopy of pole-stage trees	Main canopy of shrubs, young trees or regeneration	No continuous canopy. Isolated trees only

**Forest Condition – Canopy density (tick main canopy)**

Dense <input type="checkbox"/>	Open <input checked="" type="checkbox"/>	Very open <input type="checkbox"/>
Canopy density>70%	Canopy density<70%	No real canopy. Isolated trees only

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

Forest Condition – Approximate density of seed trees		
High <input type="checkbox"/>	Moderate <input type="checkbox"/>	Low <input checked="" type="checkbox"/>
>50 seed trees per ha	10–50 seed trees per ha	<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 type="checkbox"/>	No <input checked="" type="checkbox"/>	
Forest Condition Class Box				
Age	Canopy density	Regeneration	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
Shrub land 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)	55%
Dominant vegetation type in the open space	Mixed shrubs
Cause of open space. Grazing, fire, harvesting, etc.	Over harvesting and intensive cattle grazing establishment

**Grazing and fodder (complete if the forest block is used for grazing or fodder)**

Grassland type			
Natural <input type="checkbox"/>	Man-made <input type="checkbox"/>	Mixture <input checked="" type="checkbox"/>	Predominantly forest <input type="checkbox"/>

Main fodder species being used ( <i>list 3 only</i> )	
Local name	Scientific name
Zhoshing	<i>Ficus spp</i>
Zhorushing	<i>Ficus spp</i>
Nangsashing	<i>Ficus semicordata</i>

Pasture quality (list the 3 dominant species in the grassland)		
Local name	Scientific name	Palatable/unpalatable
Kerma	<i>Dryopteris spp</i>	unpalatable

Use pattern <input type="checkbox"/>	Seasonal <input type="checkbox"/>	All year <input checked="" type="checkbox"/>
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Type of user	Migratory <input type="checkbox"/>	Local <input checked="" type="checkbox"/>	Both <input type="checkbox"/>
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**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 type="checkbox"/>
25-50% of the soils are covered by vegetation	moderate <input checked="" type="checkbox"/>
<25% of the soils are covered by vegetation	low <input type="checkbox"/>
(ii) Catchment Condition – Soil type and erosivity	
<b>Soil type (colour, texture and type)</b>	
Erosive <input type="checkbox"/>	Non-erosive <input type="checkbox"/>
Disperses and/or breaks up in water easily	Stable to water flow
(i) 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 type="checkbox"/>	Moderately critical <input checked="" 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
Rifak	<i>Sus scrofa</i>
Kasha	<i>Axis Axis</i>
Shawa	<i>Rusa unicolor</i>
Ziig	<i>Uncia uncia</i>
Praa	<i>Macaca Assamensis</i>
Raksha	<i>Trachypithecus pileatus</i>
Usaling (Porcupine)	<i>Erethizondorsatum</i>
Dhom	<i>Ursus thibetanus</i>
Chulung (Great Barbet)	<i>Megalaima virens</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 checked="" type="checkbox"/>	Limited <input type="checkbox"/>	Absent <input type="checkbox"/>	
NWFP collection (list the main products including bamboo &cane)	Common <input checked="" type="checkbox"/>	Limited <input type="checkbox"/>	Absent <input type="checkbox"/>	
Leaf litter collection	Common <input type="checkbox"/>	Limited <input checked="" type="checkbox"/>	Absent <input type="checkbox"/>	

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)			

<b>Potential Management Options</b> ( <i>list any potential management options for the CF/block</i> )	
1	Cleaning and thinning
2	Plantation creation in degraded area.
3	Sustainable harvesting of timber.
4	Protection of forest from illegal harvesting
5	Manage natural regeneration.
6	Raising seedling by individual members

### 8.3 Annual Allowable Cut for Timber

Annual Allowable Cut Table							
Annual Allowable Cut (AAC)	Dangchun m <sup>3</sup>	Tsim m <sup>3</sup>	Cham m <sup>3</sup>	Drashing m <sup>3</sup>	Firewood m <sup>3</sup>	Flag Poles	Fencing Posts m <sup>3</sup>
Tadongchen	2.89 (72 nos)	6.62 (66 nos)	50.44 (168 nos)	381.71 (218 nos)	731.8 (105 nos of 39 - 49cm dbh & 400 nos of 50+ cm dbh)	4.40 (44 nos)	1.76 (44 nos)
<b>Total AAC</b>	<b>2.89</b>	<b>6.62</b>	<b>50.44</b>	<b>381.71</b>	<b>731.8</b>	<b>4.40</b>	<b>1.76</b>

**Notes:** for CFMG's understanding, m<sup>3</sup> can be converted into cft. (1 m<sup>3</sup> = 35.32 cft). Volume can also be converted into number of trees.

### 8.4 Annual Allowable Cuts – NWFPs

NWFP	Blocks (for harvesting)		Quantity to be harvested annually
	No.	Name	
Wild mushroom		Tadongchen	50 kgs for self-consumption
<i>Elastotema</i> spp		Tadongchen	100 bundles for self-consumption

Small bamboo		Tadongchen	1000 numbers
Ferns		Tadongchen	
<i>Daphne</i> spp.		Tadongchen	Harvest for commercial twice in a plan period (1 during 1 <sup>st</sup> – 4 <sup>th</sup> year and 2 <sup>nd</sup> from 6 <sup>th</sup> – 9 <sup>th</sup> year)

## 9. FOREST MANAGEMENT

### 9.1 Block Wise Management Procedures

Produce/services	Timber (Drashing, Cham, Tsim & D/hung	Firewood & flag post	NWFPs
Main species	<i>Acer spp, Cinimomum spp, Persea spp, Michelia spp.</i>	<i>Quercus spp, Castranopsis spp</i>	<i>Elastotema spp, Wild mushroom</i>
Problems	Lack of natural regeneration and disturbances by wild animals	-	Absence of bamboos
Opportunities	To restock forest and sustainable management of forest	Use lops and tops of felled trees, diseased, deformed and dying trees	-
Management objectives (reflecting problems and/or opportunities)	To ensure sustainable utilization and management of forest resources .	To protect and improve water sources and envt. conservation	To generate income through the sale of surplus timber and to improvement of livelihoods of communities in future.
Activities to achieve the objective (mark as H, M or L)	<ul style="list-style-type: none"> <li>• Carryout plantation in degraded areas with high value timber species(H)</li> <li>• Thinning, pruning and clearing of bushes and climbers cutting (M)</li> <li>• Allotment of timber and permit issuance</li> <li>• Marking of trees</li> <li>• Timber harvesting (M)</li> <li>• Sale of excess timber</li> </ul>	<ul style="list-style-type: none"> <li>• Felling of trees within radius of 100 feet shall be prohibited(H)</li> <li>• Retention of trees and plantations near the water source area (H)</li> </ul>	<ul style="list-style-type: none"> <li>• NWFP harvesting by the CFMG members for self-consumption only.</li> </ul>

Procedures	<ul style="list-style-type: none"> <li>• Obtain permits for the marking of trees and conduct CFMG meetings annually for planning the activities for timber allotment, marking, and the issuance of permits</li> <li>• Put up timber application forms to Chairperson</li> <li>• Verify by the CFMC</li> <li>• Decide on timber allotment during CFMG meeting and allot to needy Hhs after agreeing by the CFMG members based on the AAC</li> <li>• Issue permit and fees</li> <li>• Request concern forest official for marking of trees</li> <li>• Harvest timber avoiding damages around the surrounding and minimize wastage</li> <li>• Identify area for plantation creation, seek technical assistance for selection of species and planting techniques, provide labour by the CFMG members for plantation works</li> </ul>	<ul style="list-style-type: none"> <li>• Demarcate water source area</li> <li>• Penalize defaulters</li> <li>• Seek fund from Gewog Administration for protection of drinking water source area</li> </ul>	<ul style="list-style-type: none"> <li>• Products shall be sold as per the current NRPC rate</li> </ul>
Responsibilities	CFMG executive members, CFMG members and concerned forestry official		

## 9.2 Forest Management Objectives (whole CF)

The overall objectives of Tadongchen Community Forest are prioritized as follows:

- To ensure sustainable utilization and management of forest resources.
- To protect and improve water sources and environment conservation.
- To generate income through the sale of surplus products for improvement of livelihoods of communities in future.

## 10. FOREST PRODUCT DEMAND OF CFMG

Produce	Annual household requirement (estimated)		Number of Households using the produce (if all then write “all”)	Total requirement (Over 10 years)	
	No. of trees	Volume (cft)		No. of trees	Volume (cft)
New Construction					
Drashing	18	1112.22	3	540	33366.6
Cham	2	21.18	3	60	635.4
Repair & Other Construction					
Drashing	3	185.37	5	150	9268.5
Cham	2	21.18	5	100	1059
Tsim	40	141.2	-	-	-
Dangchung	50	70.5	-	-	-
Other Forest Produce					
Firewood	2	-	84	840	-
Flagpoles	5	17.65	10	500	1765
Fencing post	50	70.5	10	5000	705
NWFPs	-				

## 11. COMPARISON OF AAC AND DEMAND

Produce	Total AAC		Total Annual Demand		Difference		Comments
	No. of trees	Volume (m <sup>3</sup> )	No. of trees	Volume (m <sup>3</sup> )	No. of trees	Volume (m <sup>3</sup> )	
Drashing	218	381.71	69	4263.51	+149	9206.71	Surplus timber and firewood will be sold to both CFMG members and outsiders
Cham	168	50.44	16	169.44	+152	1609.68	
Tsim	66	6.62	-	-	+66	232.98	
Dangchung	72	2.89	-	-	+72	101.52	
Firewood	505	731.8	86	-	+419	-	
Fencing Post	44	1.76	500	755	-456	642.96	Will be met from Drashing size N trees and tsim
Flag poles	44	4.4	50	176.5	-6	21.18	Will be met from Dangchu

NWFPs ( <i>list all NWFPs</i> )	0	0					
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## 12. PARTICIPATORY ENVIRONMENTAL ASSESSMENT

Activity Proposed in CFMP	<i>Potential Environment Impact</i>					<i>Potential Socio-economic Impact</i>				
	Soil	Water quality	Catchment Condition	Animals	Plants	Traditional forest use	Cultural and Religious Values	Local Employment	Local supply of forest products	Equity in decision making
Plantation	++	++	+++	++	++	0	0	0	+	+
Grazing control	+	+	++	-	++	0	0	0	0	0
Thinning and cleaning	0	0	-	-	0	0	+	+	+	0
Timber and fuel wood harvesting	--	--	--	--	--	0	-	+	++	++
Forest protection	+++	+++	+++	+++	+++	++	+++	+++	+++	+++
Water source protection	+++	+++	+++	+++	+++	++	+++	+++	++	+++
NB: (0) = No impact at all, (-) = Negative impact, (+) = Slight positive impact										
(++) = More positive impact, (+++) = Much more positive impact.										

Procedures to Address Potential Negative Environmental Effects	
Activity	Procedure
Timber and fuel wood harvesting	<ul style="list-style-type: none"> <li>✓ Marking and felling of trees on the steep slope shall be restricted.</li> <li>✓ Marking and felling of trees within the radius of 200' of water source areas will be prohibited.</li> <li>✓ Selective felling will be done to ensure enough seed trees retained to promote natural regeneration.</li> <li>✓ No rolling of logs will be carried out on the steep slopes.</li> <li>✓ The allotment of quantities of tree to individual members shall be</li> </ul>



	controlled by the executive committee members.
Plantation	✓ Creation of plantation in degraded and water source.

### 13. FOREST PRODUCT AND SPECIES PREFERENCE

Species Local name ↓	Uses →	Timbers	Firewood	Fencing post	Flag post	Fodder	Leaf litter
Ngangnashing (Champ)	Preference	++++	++	+	+	-	-
	Availability	xx	x	x	x	-	-
Praguli (Kawla)	Preference	+++	++	+	-	-	-
	Availability	xx	xx	x	-	-	-
Phangkhebshing ( <i>Quercus spp</i> )	Preference	+	++++	++	+	+	++
	Availability	xxx	xxx	xx	xx	x	x
Sumashing ( <i>Cinamomum spp</i> )	Preference	+++	++	+	++	-	-
	Availability	xx	xx	x	x	-	-
Serkaling ( <i>Acer</i> <i>spp</i> )	Preference	+++	++	+	-	-	-
	Availability	xx	xx	x	-	-	-
Takoshing (Walnut)	<i>Preference</i>	++++	+	+	+	-	-
	<i>Availability</i>	xx	x	x	x	-	-
Domburshing ( <i>Symplocos spp</i> )	<i>Preference</i>	+++	+	++	++++	-	-
	<i>Availability</i>	xx	x	xxx	xxx	-	-
Sokeyshing ( <i>Castanopsis spp</i> )	<i>Preference</i>	++	++	++++	+	-	+
	<i>Availability</i>	xx	xxx	xxx	x	-	x

**Note:**

+++ = Highly preferred

++ = Medium preferred

+ = Least preferred

xxx = Highly available

xx = Medium available

x = Scarcely preferred

### 14. MONITORING PLAN BY CFMG

Forest Resources Monitoring				
Activities (as per AWP)	Indicator	How it will be monitored	Responsibility	Comments

Plantation and maintenance works	No. of seedling planted Area and species planted, survival percent	1. Check plantation records, attendance of labor contributed 2. Layout 2.5m x 2.5 sample plot and count seedlings in the plot 3. Status of the seedlings planted	CFMC & CFMG	Concern Forest Ranger shall assist
Cleaning and thinning	Site, total area and intensity of thinning carried out	Visual inspection and status of the site. Unhealthy growth of trees should be removed.	ECM & CFMG	
Harvesting of timber, firewood, fencing posts and flag posts	Permit issued and no of trees allotted and harvested. Also nos. of house constructed/repaired	Check permit books and utilization record	Chairperson, Secretary and CFMG members	Concern Forest ranger shall assist
<b>Environmental Monitoring Plan</b>				
<b>Potential impact (negative)</b>	<b>Indicator</b>	<b>How it will be monitored</b>	<b>Responsibility</b>	<b>Comments</b>
Illegal felling/activities	Nos of trees felled, check hammer impression and permits	Patrolling and inspection of illegal activities and apprehend offenders	ECM & CFMG	
<b>Social &amp; Institutional Monitoring Plan</b>				
General CFMG meeting	Recording and keeping minutes of meeting	Monitor whether the meeting is held or not as per the plan	All the CFMG members and respective forest official.	
Livelihood enhancement	Income generated and development in the community	Check records maintained with CFMG	CFMC and forestry staff	
Capacity development	No. of trainings received on different topics	Assessment of training impact	CFO, forestry staff & CFMC	

## 15. ANNUAL WORK PLAN

Management objective	Activity	Block or location	Quantity	Unit	Year	Month
Ensure sustainable utilization and management of forest resources	Creation of plantation in degraded areas	Tadongchen	3	Acres	2 <sup>nd</sup> , 4 <sup>th</sup> , 6 <sup>th</sup> , 8 <sup>th</sup> & 10 <sup>th</sup>	April-May
	Maintenance of plantation	Tadongchen	2	Times	2 <sup>nd</sup> to 10 <sup>th</sup>	May & Sept.
	Home tree nursery seedling raising	Tadongchen	20	Seedlings/Hhs	1 <sup>st</sup> , 3 <sup>rd</sup> , 5 <sup>th</sup> , 7 <sup>th</sup> & 9 <sup>th</sup>	Jan-Feb
	Timber & firewood allotment and marking	Tadongchen	As per demand & AAC	Nos.	1 <sup>st</sup> to 10 <sup>th</sup>	Jan-Dec
	Forest Fire control	Tadongchen	As and when there is forest fire outbreak			
	Thinning, cleaning, singling & pruning	Tadongchen	100	Acres	2 <sup>nd</sup> , 5 <sup>th</sup> , 6 <sup>th</sup> & 9 <sup>th</sup>	Feb-Sept
	Annual CFMG meeting		1	Time	1 <sup>st</sup> to 10 <sup>th</sup>	Dec/June
	Capacity building on books and record keeping, nursery raising and planting tree seedlings	Gewog center	2	Times	1 <sup>st</sup> & 6 <sup>th</sup>	Jan-March
To protect and improve water sources and environment conservation	Water source protection	Tadongchen	1	No	1 <sup>st</sup> & 2 <sup>nd</sup>	Jan- Feb
	Patrolling	Tadongchen			1 <sup>st</sup> to 10 <sup>th</sup>	Jan- Dec
Generate income through sale of surplus	Sale of surplus timber and firewood	Tadongchen	Based on demand after meeting the CFMG members need.			
	Sale of <i>Daphne</i>	Tadongchen	Twice within a plan period (1 time in 1-5 <sup>th</sup> year & 1 from 6 <sup>th</sup> to 9 <sup>th</sup> year)			

products for improvement of livelihoods of communities in future.	Development of menchu	Ngargangchu	From 2 <sup>nd</sup> year
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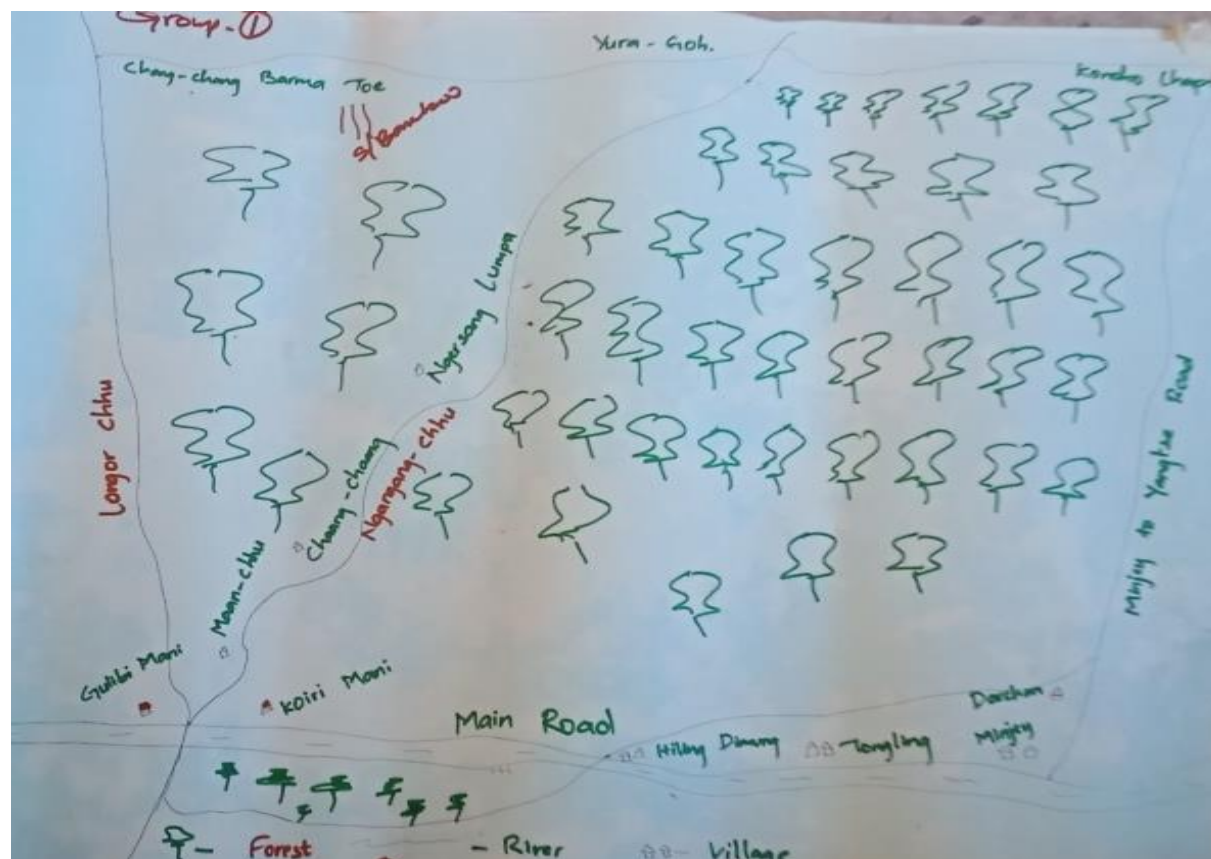


Figure 1: Participatory Forest use Map

## **PART B: BY LAWS**

### **Name of Community Forest Management Group and Community Forest**

Tadongchen is the name of this community forest collectively decided by the CFMG. The community forest user group consists of 83 total households.

### **16. MEMBERSHIP ARRANGEMENT**

Any resident of Menji, Tongling and Wangzhing Chewog under Menji-Wangzhing chewog with valid gung and thram number can be a new member of the group approval from the Executive committee and CFMG member. The Tadongchen Community Forest management group is defined as native resident of Menji, Tongling and Wangzhing villages under Menji-Wangzhing Chewog of Menji Gewog with valid house and thram numbers.

#### **16.1 Procedures for becoming new CFMG member**

- ✓ The fragmented family members opting to join CFMG member shall be entertained upon payment of equivalent amount of fees collected from individual household as the annual membership fees.
- ✓ Whereas, Gung Tong (house without household member) wishing to join the CFMG shall be accepted only on payment of Nu.2000/- as entry fee and on top of this he/she will have to pay equivalent yearly accumulated fees and total numbers of labor contributed by a household at the time of joining the group.
- ✓ The households which are present during the initiation of CF, but refused to join in group and opting to join later shall do so only on payment of equivalent yearly accumulated fees and total numbers of labor contributed by a household at time of joining the group and on top of this he/she will made to pay sum of Nu.2000/- as entry fee.
- ✓ Any individual whose census is registered outside these three villages shall not be accepted to join the CFMG.

#### **16.2 Procedure for withdrawal of members from the CFMG**

- ✓ **Voluntarily resign:** Any individual household intend to withdraw from the group can do so without any benefit. He/she thereafter have no rights to the CF resources and the fees

and labor contributed during his/her tenure as CFMG member shall be forfeited to CF account.

- ✓ **Involuntarily resign:** Any individual member intended to resign from the group due to unavoidable circumstances like resettlement can do so and shall receive his or her share from the sum accumulated in the groups' accounts at the time of resignation.
- ✓ 10% of his/her share will remain with group out of 100% share if involuntarily resigned.

## **17. MANAGEMENT COMMITTEE FORMATION**

The CFMG will have six elected CFMC members as an office bearer, who shall look after the overall planning and implementation of CF related management activities in accordance to the CFMP. The CFMG will have a Chairperson, Secretary, Treasurer and three Resoops elected through secrete voting or unanimous decision of the CFMG. The term of elected executive members are for five years and new executive members shall be elected the CFMG. The CFMC and their tenure are further deliberated below. In case if he/she has to separate from the CFMG to unavoidable circumstances immediate election shall be carry out to appoint new CFMC. Incentives or compensation for the executive members. The CFMC member will be paid as per following rates fixed as incentives when he/she is out of station for CFMG related works.

- i. Chairperson – Nu.700/- per day
- ii. Secretary – Nu.700/- per day
- iii. Treasurer – Nu.700/- per day
- iv. Resoop – Nu.700/-per day and Nu.300/- for half day during marking & patrolling

## **18. TERMS OF REFERENCE FOR CFMG MANAGEMENT COMMITTEE**

### **ToR of Chairperson**

- Heads the CFMG and coordinate with other stakeholders.
- Calls meetings whenever necessary and informs concerned persons about date, time and place and the reasons for the meeting.
- Chairs and facilitates meetings and makes sure each person is allowed to speak, thereby giving everyone a fair chance to raise issues
- Approves applications for forest products (with secretary).
- Countersigns payment authorization (with treasurer).

- Settle the cases and resolves the dispute rises between CFMG.
- Monitor and review the plan activities.
- Report to forest office, on the developments on CF
- Attend important meetings and training on CF.

#### **ToR of Secretary**

- Assists and officiate the chairperson as required.
- Manages the correspondence (writing of letters and minutes of meetings) for the CFMG.
- Keeps the files of the CFMG.
- Maintains the list of CFMG members
- Approves applications for forest products (with chairperson).
- Keeps minutes of CFMG meetings.
- Prepares annual progress report (with other CFMG Management Committee members).

#### **TOR of Treasurer**

- Looks after any financial transactions on behalf of the CFMG.
- Keeps records of expenditure and labour contribution during CF activities
- Gives a detailed account of how much money or labour has been contributed, how much has been spent and how much is still left, at every CFMG meeting (or as required)
- Prepares the annual financial report (with the assistance of other CFMG Management Committee members) and submit to the CFO through the Geog In-charge.
- Countersigns payment authorization (with chairperson).

#### **TOR of Resoop**

- To look after illegal activities.
- To conduct patrolling, once in a month during the NWFPs collection season throughout the CF area on rotational basis and report to the Chairperson.
- Monitoring of CF activities in accordance to management plan
- Keep vigilance for selling of products to middleman.
- Keep strict vigilance on forest fire during the dry season



### **Roles and Responsibility of CFMG and CFMG members**

- To follow the procedures and rules of the CFMG as outlined in the CF Management Plan and By-laws.
- Participation in CFMG planning and decision-making.
- Election of CFMG Management Committee members.
- Participation in drafting of the CF management plan and CFMG by-laws.
- Participation in CFMG meetings.
- Co-operation with the CF Management Committee in carrying forest management and other management operations especially by contributing labour if required.
- Co-operation with the CFMG Management Committee regulating forest use by other CFMG members and by outsiders
- Become involved in other CFMG activities as planned

### **19. FEES**

The CFMG members shall pay fees for forest produce utilization and annual membership fees as per the rates fixed in the table below:

<b>Sl. No</b>	<b>Forest Products/ Membership Fees</b>	<b>Procedures</b>	<b>Fees (Nu)</b>
1	Membership fees	Individual member fee collection annually	200/-
2	Drashing	20 Nos. Drashing for 2 stored new house construction per HH and 10 nos. Drashing per HH for 1 stored new house construction. And 5 nos drashing per Hhs for renovation	60/tree
3	Cham	Maximum of 20nos of cham for new construction and 5 nos for repair	30/tree
4	Fencing Post	one number drashing size tree not suitable for timber	60/tree
5	Firewood	2 nos of standing tree not suitable for timber	60/tree
6	Tsim		15/tree
7	Dangchung, flag poles &		10/tree

	poles		
8	Stone/Boulders	Stone/boulders and GSB will only be allotted for rural purpose	200/T/L
7	GSB		300 t/l

## 20. FINES AND PENALTIES

Sl. No.	Offences	Penalties/fine	Compensation	Remarks
1	Drashing walnut & champ	Nu. 100/- per cft.	As per the latest FNCRR	The fine shall be applied both for CFMG members and non CFMG members
2	Drashing other timber species	Nu. 100/- per cft.	As per the latest FNCRR	
3	Fire wood	Nu. 100/- per cft.	As per the latest FNCRR	
4	Cham	Nu. 100/- per cft.	As per the latest FNCRR	
5	Tsim	Nu. 100/- per cft.	As per the latest FNCRR	
6	Dangchung	Nu. 100/- per cft.	As per the latest FNCRR	
7	Fencing pole and flag pole	Nu. 100/- per cft.	As per the latest FNCRR	
8	NWFP like rawa (small bamboo)	As per the latest FNCRR	As per the latest FNCRR	
9	NWFP like <i>Daphne</i>	As per the latest FNCRR	As per the latest FNCRR	
10	Absentee from CFMG general meeting	Any CFMG unable to attend annual/CFMC meeting shall pay a fine of Nu.500 per incidences.		
11	Absentee during any CF related work	Any CFMG members unable to attend any CF related work shall pay a fine of Nu.700/- per day.		
12	For coming late for meeting and CF work for 15 minutes	Any member coming late for meeting and CF work will have to pay Nu. 100/- per incidences.		
13	Cattle grazing in plantation areas	Under unavoidable circumstances if both CFMG member and nonmembers cattle are found grazing shall be given first and last warning. Thereafter, compensation of Nu.50/cattle head will be charged per incidence. And the owner has to replant the damaged seedlings.		

14	Over lopping or illegal collection of fodder trees	Nu.50/back load will be charged, and only following trees species are allowed to collect for fodder by lopping only branches of Zhoshing, Tsarshoshing, Zhorushing, Nareangtseshing & Laytshoshing, etc.
15	Penalty for failure to pay annual membership fees	Individual failing to pay annual membership fee on fixed dateline, shall be given five days for arrangement, failing to pay thereafter will be made to pay double the amount and failing to do shall be terminated from CFMG and will not have access to CF products.
16	CFMC failing to perform their duties	Any CFMC failing to perform their roles and responsibilities as desired shall be terminated from CFMC in addition to bearing of their penalties.
17	Absentee from forest fire fighting	Any member unable to attend the forest fire fighting shall pay a fine of Nu.200/- per incidence.
18	Felling of trees within 100' of water source area	Penalty as per FNCRR
19	Failing to bear above penalties	Any member failing to anticipate the above offences will be dealt as per the community forest By-laws and FNCRR
20	Burr	Penalty as per FNCRR
21	Jakpa (Satuwa)	Penalty as per FNCRR
22	Boulders/stone	Nu.3000/- per T/L for members and as per FNCRR for non members
23	Waste	Nu.500/- per occasion for first time, 1000/- for second time and Nu. 1500/- third time and so on. Every increase of Nu. Nu.500/- if repeated again and again. The amount collected will be deposited to group account.

## 21. MANAGING CFMG FUND AND CREDIT

- ✓ The community group fund will be generated from collection of annual membership fees, fines, penalties, sales of surplus timber and collection of fees from utilization of CF products.

- ✓ The CFMG shall continue to operate joint saving accounts in BDBL at Lhuentse with a joint signatory of Chairperson, Secretary and Treasurer.
- ✓ Each CFMG members shall contribute Nu.200/- per year as member fee for entire CF plan period.
- ✓ The collected money can be deposited into the group's account by any of the members produces the receipts during meetings and auditing. The cash book to be updated by the Treasurer in consultation with other executive committee member and present financial status during the annual CFMG general meeting.
- ✓ The Community fund generated through the different sources shall be utilized as follows:
  - i. Loaning for a period of one year with maximum amount of Nu.100,000/- (One lakh) at interest rate of 5% per annum to the CFMG members after producing guarantor.
  - ii. The amount not more than 20% will be used for community development activities like Rural Water Supply Scheme (RWSS), community lhakhang, school and outreach clinic maintenance etc.
  - iii. For serving refreshment while implementing CF activities.
  - iv. Use for procurement of fencing materials and seedlings for plantation for development of the CF.
  - v. CFMG capacity building; training on book and record keeping, nursery raising and plantation, CFMG governance, business planning, etc.
  - vi. Midterm and final evaluation of CFMP and revision of management plan.

## **22. BENEFIT SHARING PROCEDURE**

- ✓ Every member has the rights for any forest products from the designated CF area. However, individual need to obtain the permits from the Chairperson and the tree needs to be marked prior to felling.
- ✓ The marked tree shall be extracted within one year period from the date of issue of permits and failing to do so shall be lapsed and extraction shall not be allowed.
- ✓ The tree allotted for the individual member shall be strictly for self/rural use and sale of such products shall be strictly prohibited.

- ✓ The timber for community development works or community infrastructure like outreach clinic and community lhakhangs will be provided free of royalty only if there is no funding support from the government. However, the volume of timber allotment for such developmental activities shall be accordingly adjusted to the AAC.
- ✓ Timber requirement in the event of natural calamities like earthquake and fire shall be provided from the CF on free royalty especially to the poorest section of the group. Quantity of allotment shall be decided by the CFMG.
- ✓ All the CFMG members have traditional grazing right in the CF areas, but are restricted from grazing inside plantations. The grazing by the outsider shall not be allowed.
- ✓ The collection of the fodder trees such as; Zhoshing, Tsarshoshing, Zhorushing, Nare angseshing and Lhasoshing shall be allowed only by lopping of the branches, however, the felling and over lopping should be strictly prohibited.

## **23. MEETINGS**

The CFMG will have two categories of meeting, one for the general CFMG members and other for the CFMC. The frequencies of these two meeting will also differ as well.

### **23.1 General Meeting**

General CFMG meeting will be conducted biannually. The meeting shall commence yearly during the month of June and December with primary focus to discuss on the plan activities remaining ahead for implementation, and in same way review the past activities to prepare annual progress report.

### **23.2 Committee Member Meeting**

The meeting will be conducted on quarterly basis upon the advice of the Chairperson. The meeting will discuss and solve the problem related to plan activities. They will also discuss the issues raised by the CFMG members and other stakeholder.

## **24. CONFLICT MANAGEMENT**

To the extent possible, the CFMC shall try to resolve any sort of conflicts arising within the CFMG internally. Under extreme and critical situation only, the conflict arising among CFMG shall be resolved through following procedures.





## **25. AMENDMENT OF CFMP AND BY-LAWS**

If needed minor changes shall be made upon discussion during annual meeting and should be included in the minutes of the meeting however, information should be provided to the Range Office for information. At the end of final plan period, an evaluation will be done in collaboration with the DFO whereby the recommendations will be integrated in the new management plan based on the findings from evaluation report. The CFMP shall be reviewed/amended towards the end of 10<sup>th</sup> year of the management plan period

## **26. POWERS OF THE DEPARTMENT**

Although the CFMG has an approved management plan, the DoFPS still reserves right for Cancellation/Suspension of Community Forest Certificate as stated in FNCRR, 2017 as:

- As per section 101 in the event the members of the CFMG decide to cancel CF certificate in accordance with this Rules, the Community Forest Certificate shall be cancelled with effect from the date of notification of the decision to the CFO. The CFMG shall then surrender the Certificate to the Department.
- As per section 102 the CFO shall have the right to enquire about the reason for such cancellation to ensure that no offence has been committed, as outlined under this Rules.
- As per section 103 In the event the number of member household in the CFMG fall below five or the group otherwise ceases to meet the requirements under this Rules; the CFO shall notify the CFMG that its certificate shall be cancelled.
- As per section 104 the Department shall suspend the rights and privileges of the CFMG to control, manage and utilize the CF upon the recommendation of the CFO, in the event of the following:
  1. The CFMG is unable to manage the Community Forest according to its management plan or otherwise fails to meet their responsibilities; and
  2. The CFMG has engaged in any activity in contravention of the provisions of the Act, Rules, by-laws or the management plan.

- As per section 105 the period of suspension shall be for a minimum period of 3 years. During the suspension period, the CFMG members shall not be eligible for any forest produce from the SRF.

## 27. ANNEXURES

### 27.1 List of CFMG Members

Sl. No	Name of CFMG	CID. No.	Village	Gung No.	Thram No.	Remarks
1	Karma (A)	10606001980	Wangzhing	Cha-6-140	100	
2	Jigme Thinley	10606001989	Wangzhing	Cha-6-171	160	



3	Chhimi	10606001996	Wangzhing	Cha-6-172	175/34 2	
4	Deki Pelden	10606002012	Wangzhing	Cha-6-173	178/99	
5	Kezang	10606002022	Wangzhing	Cha-6-175	11/196	
6	Jigme Wangdi	10606002032	Wangzhimg	Cha-6-176	105/13	
7	Dechen Lhamo	10606002394	Wangzhing	Cha-6-177	111/17 9	
8	TashiMo (A)	10606002058	Wangzhing	Cha-6-178	182	
9	Thuji Dema	10606002065	Wangzhing	Cha-6-179 Ka	109/16 9	
10	TsetseLa	10606002076	Wangzhing	Cha-6-180	144/12	
11	Kunzang Choden	10606002082	Wangzhing	Cha-6-181	112/15	
12	Thinley Choden	10606002088	Wangzhing	Cha-6-182		
13	ChokiMo	10606001817	Sershing	Cha-6-183	114/16 6	
14	Sonam Dorji (B)	10606002138	Wangzhing	Cha-6-184	326	
15	Tshokila	10606002093	Wangzhing	Cha-6-185	167	
16	Yeshe Pelzom	10606002106	Wangzhing	Cha-6-186	114/97	
17	Tshering Lhamo	10606002129	Wangzhing	Cha-6-188	103/18 5	
18	Sangay Pelmo	10606001746	Nyaka	Cha-6-189	121	
19	Sither Chozom	10606001517	Menji	Chha-6-190	221/13 8	
20	Karma Wangmo	10606001531	Tshingpeche n	Cha-6-191	134	
21	TenzinMo	10606001542	Menji	Cha-6-192	304	
22	JangsemLa	10606001553	Menji	Cha-6-194	148	
23	Tshering Tashi	10606001559	Menji	Cha-6-195	135	
24	RinzinMo	10606001571	Menji	Cha-6-197 Ka	20/136	
25	Tshering Yangdon	10606001509	Menji	Cha-6-197 Kha	136/14 7	
26	Jamyang Kelzang	10606001588	Menji	Cha-6-198	102	
27	Jamyang Choden	10606001696	Menji	Cha-6-199	128	
28	Jangchub Dorji	10606001599	Menji	Cha-6-200	141	
29	SonamLa	10606001607	Menji	Cha-6-201	136/12 2	
30	Pema Choki	10606001625	Menji	Cha-6-202	123/74	
31	Tshewang Dorji	10606001630	Menji	Cha-6-203	295	
32	Singay Yangdon	10606001639	Menji	Cha-6-204	628	Chairperson
33	NgothubMo	10606001646	Menji	Cha-6-205	81	

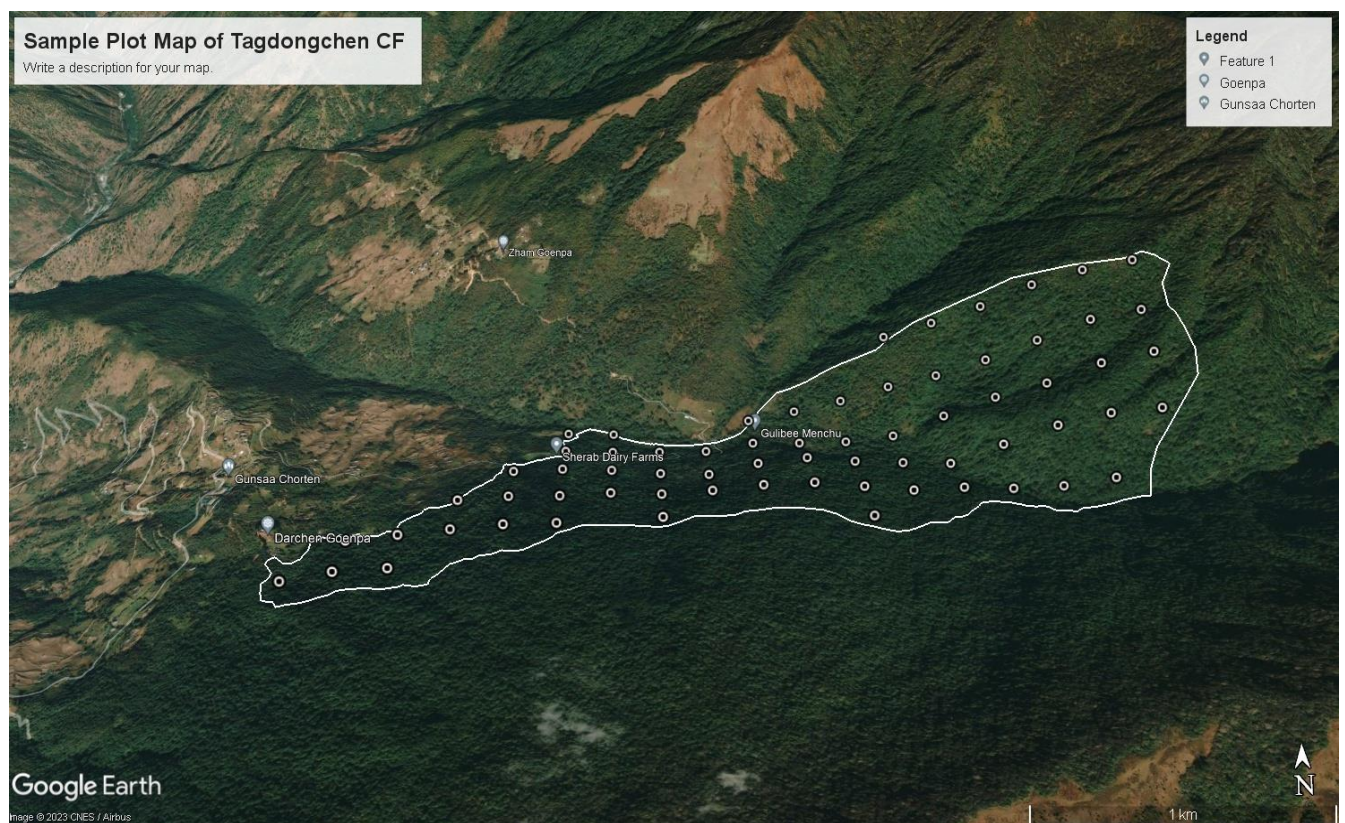
34	Thinley Dorji	10606001662	Menji	Chha-6-206	228/14 6	
35	Wangchuk	10606001680	Menji	Cha-6-208	239/14 4	
36	Lhamo (A)	10606001693	Menji	Cha-6-209	314	
37	Dechen Pelmo	10606001716	Tshingpeche n	Cha-6-210	107/17 2	
38	Kencho chophel	10606001832	Tongling	Cha-6-211	171	
39	Jangchuk Dema	10606001838	Tongling	Cha-6-212	173	
40	Dechen Zangmo	10606001848	Tongling	Cha-6-213	224	
41	Sangay Dema	10606001858	Tongling	Cha-6-214	569	
42	KungaMo	10606001868	Tongling	Cha-6-215	126	
43	Yangdon	10606001879	Tongling	Cha-6-216	126/10 3	
44	SonaMo	10606001893	Tongling	Cha-6-217	141/17 0	
45	Rinzin Lhamo	10606001902	Tongling	Cha-6-218	220	
46	Yeshe Peldon	10606001905	Tongling	Cha-6-219	142/15 5	
47	Sonam Gyeltshen	10606001911	Tongling	Cha-6-220	210	
48	Sonam Dorji (A)	10606001941	Tongling	Cha-6-222	163	
49	Pema Wangmo	10606001942	Tongling	Cha-6-229	83	
50	Tenzin Dema	10606001901	Tongling	Cha-6-230 Kha	181	
51	Tshering Yuden	10606001950	Tongling	Cha-6-230 Ka	218	
52	Pema Yuden	10606001964	Menji	Cha-6-232	80	
53	Sonam Lhamo (A)	10606002142	Wangzhing	Cha-6-235	104	
54	PelkiMo	10606001966	Tongling	Cha-6-242	141	
55	Deki Choden	10606001846	Tongling	Cha-6-248	477	
56	TashiMo (B)	10606001529	Menji	Cha-6-250	365	
57	Sonam Lhamo (B)	10606001841	Tongling	Cha-6-255	450	Treasurer
58	Tshewang Dema	10606001750	Menji	Cha-6-256	318	
59	Karma Seldon	10606002105	Wangzhing	Cha-6-263	516	
60	Tshewang Peldon	10606001885	Tongling	Cha-6-266	603	
61	Sonam Choden	10603001790	Menji	Cha-6-269	568	
62	Pema Yangchen	10606002153	Wangzhing	Cha-6-270		
63	Yeshe Choden	10606002148	Menji	Cha-6-271	633	
64	Thukten Lhamo	10606001946	Menji	Cha-6-282	698	
65	Kinzang Choden	10606001958	Tongling	Cha-6-286	706	

66	Tshering Dema	11605000654	Menji	Cha-6-287	660	
67	Nima Gyeltshen	10606001666	Menji	Cha-6-288	720	
68	Karma Tashi	10606001668	Menji	Cha-6-289	721	
69	Jigme Choden	10606001740	Menji	Cha-6/Nil/24		
70	Dechen Wangmo	10606001694	Menji	Cha-6-Nil/25	255	
71	Karma (B)	10606001584	Tongling	Cha-6- Nil/32	449	
72	Yeshimo	10606001647	Menji	Cha-6-Nil/35	394	
73	Sonam Peki	10606001872	Tongling	Cha-6-Nil/46	313	
74	Yeshi Dorji	10606001673	Menji	Cha-6-Nil/48	393	
75	Pema Deki	10606001523	Menji	Cha-6-Nil/58	559	
76	Pema Dechen (B)	10606001894	Tongling	Cha-6-Nil/77	630	
77	Kinley Penjor	10606002104	Wangzhing	Cha-6-Nil/84	443	
78	Pema Gyeltshen	10606001522	Menji	Chha-6-190	221/13 8	
79	Tseten Lhamo	10606001562	Menji	Cha-6-195	118/13 5	
80	Tshering Dorji	10606001641	Menji	Cha-6-204	83	
81	Yeshimo	10606001713	Tshingpeche n	Cha-6-210	107/17 2	
82	Zepa Jatsho	10606001868	Tongling	Cha-6-215	126	
83	Namkha Wangmo	10606001895	Tongling	Cha-6-217	141/17 0	

## 27.2 List of Community Forest Management Committee Members

Sl. No.	Name of person	Gender	Address	Responsibility	Contact No.	Tenure
1	Singay Yangzom	Female	Menji	Chairperson	17888093	5 years
2	Karma Tshering	Male	Tongling	Secretary	77344111	5 years
3	Sonam Lhamo	Female	Tongling	Treasurer	17601885	5 years
4	Sonam Dorji	Male	Tongling	Resungpa	17701216	5 years
5	Nima Gyeltshen	Male	Tongling	Resungpa	17935966	5 years
6	Gembo Dorji	Male	Wangzhing	Resungpa		5 years
7	Choney Lhuendup	Male	Tongling	Resungpa	17730849	5 years

## 27.3 Sample Plot Map



#### 27.4 CF Sample Plot GPS coordinates

Plot ID	Longitude	Latitude
TC1	91.24598772	27.59099017
TC2	91.24851926	27.59096743
TC3	91.25105079	27.59094464
TC4	91.24854482	27.59322294
TC5	91.2510764	27.59320015
TC6	91.25360798	27.59317731
TC7	91.25613956	27.59315443
TC8	91.25867114	27.5931315
TC9	91.26373428	27.59308549
TC10	91.27386053	27.59299294
TC11	91.25363364	27.59543282
TC12	91.25616528	27.59540994
TC13	91.2586969	27.595387
TC14	91.26122853	27.59536402
TC15	91.26376015	27.595341
TC16	91.26629177	27.59531793
TC17	91.26882339	27.59529481
TC18	91.271355	27.59527164
TC19	91.27388661	27.59524843
TC20	91.27641822	27.59522518
TC21	91.27894982	27.59520187
TC22	91.28148142	27.59517853
TC23	91.28401302	27.59515513
TC24	91.28654461	27.59513169
TC25	91.25619099	27.59766545
TC26	91.25872267	27.59764251
TC27	91.26125435	27.59761953
TC28	91.26378602	27.5975965

Plot ID	Longitude	Latitude
TC35	91.28150765	27.59743401
TC36	91.2840393	27.59741062
TC37	91.28657095	27.59738717
TC38	91.28910259	27.59736368
TC39	91.25874844	27.59989802
TC40	91.26128017	27.59987503
TC41	91.2638119	27.599852
TC42	91.26634362	27.59982893
TC43	91.26887534	27.5998058
TC44	91.27140706	27.59978263
TC45	91.27393877	27.59975942
TC46	91.27647048	27.59973616
TC47	91.27900219	27.59971285
TC48	91.28153389	27.5996895
TC49	91.28406559	27.5996661
TC50	91.28659729	27.59964265
TC51	91.28912899	27.59961916
TC52	91.25877422	27.60215352
TC53	91.261306	27.60213054
TC54	91.26890132	27.6020613
TC55	91.27143309	27.60203813
TC56	91.27396485	27.60201491
TC57	91.27649662	27.60199165
TC58	91.27902838	27.60196834
TC59	91.28156013	27.60194498
TC60	91.28409189	27.60192158
TC61	91.28662364	27.60189814
TC62	91.28915538	27.60187464

TC29	91.26631769	27.59757343
TC30	91.26884936	27.59755031
TC31	91.27138103	27.59752714
TC32	91.27391269	27.59750393
TC33	91.27644435	27.59748067
TC34	91.278976	27.59745736

TC63	91.27652276	27.60424714
TC64	91.27905457	27.60422383
TC65	91.28158638	27.60420047
TC66	91.28411818	27.60417707
TC67	91.28664998	27.60415362
TC68	91.28918178	27.60413012

## 27.5 Compilation sheet

### 27.5.1 T Trees

#### 27.5.1.1 Acer Species

OPERATIONAL INVENTORY: COMPILATION SHEET (FIXED-SIZE PLOT)								
1. CF Name : Tadongchen CF			4. Block Area:			425.16 Ha		
2. Block Name :			5. Compiling date:			05-03-2022		
3. No of plots : 68			6. Species group:			Acer		
col1	col2	col3	col4	col5	col6	col7	col8	col9
		(3 decimals)	(3 decimals)	(3 decimals)	(0 decimal s)	(2 decimals )	(2 decimals )	(2 decimals )
dbh class (cm)	class basal area (m2)	class volume (m3)	Plot size (ha)	Expansion factor	tally	nrha (stems/ha)	basha (m2/ha)	volha (m3/ha)
10-19	0.017	0.113	0.05	0.29	1	0.29	0.005	0.03
20-29	0.047	0.334	0.05	0.29		0	0.000	0.00
30-39	0.093	0.691	0.05	0.29		0	0.000	0.00
40-49	0.156	1.199	0.05	0.29	1	0.29	0.045	0.35
50-59	0.233	1.839	0.05	0.29	3	0.87	0.203	1.60
60-69	0.327	2.642	0.05	0.29	3	0.87	0.284	2.30
70-79	0.436	3.605	0.05	0.29	2	0.58	0.253	2.09
80-89	0.561	4.733	0.05	0.29	1	0.29	0.163	1.37
90-99	0.701	6.026	0.05	0.29		0	0.000	0.00
100-109	0.714	7.491	0.05	0.29	2	0.58	0.414	4.34

#### Explanation:

**col3** : look up in volume table, for given species group and dbh class  
**col4** : plot size for given dbh class  
**col5** : (1 / col4) / (nr. of plots)

**col6** : count, and fill in  
**col7** : col5 \* col6  
**col8** : col7 \* col2  
**col9** : col7 \* col3

(when rounding: round to the nearest EVEN digit; e.g. 0.635 to 0.64 but 0.665 to 0.66)

### 27.5.1.2 *Cinnamomum* species

OPERATIONAL INVENTORY: COMPILATION SHEET (FIXED-SIZE PLOT)								
1. CF Name : Tadongchen CF			4. Block Area:			425.16 Ha		
2. Block Name :			5. Compiling date:			05-03-2022		
3. No of plots : 68			6. Species group:			<i>Cinnamomum</i>		
<i>col1</i>	<i>col2</i>	<i>col3</i>	<i>col4</i>	<i>col5</i>	<i>col6</i>	<i>col7</i>	<i>col8</i>	<i>col9</i>
		(3 decimals)	(3 decimals)	(3 decimals)	(0 decimal s)	(2 decimals )	(2 decimals )	(2 decimals )
dbh class (cm)	class basal area (m2)	class volume (m3)	Plot size (ha)	Expansion factor	tally	nrha (stems/ha)	basha (m2/ha)	volha (m3/ha)
10-19	0.017	0.066	0.05	0.29	2	0.59	0.01	0.04
20-29	0.047	0.264	0.05	0.29		0.00	0.00	0.00
30-39	0.093	0.670	0.05	0.29	4	1.18	0.11	0.79
40-49	0.156	1.352	0.05	0.29	1	0.29	0.05	0.40
50-59	0.233	2.372	0.05	0.29	4	1.18	0.27	2.79
60-69	0.327	3.789	0.05	0.29		0.00	0.00	0.00
70-79	0.436	5.662	0.05	0.29	2	0.59	0.26	3.33
80-89	0.561	8.045	0.05	0.29	2	0.59	0.33	4.73
90-99	0.701	10.996	0.05	0.29		0.00	0.00	0.00
100-109	0.714	14.567	0.05	0.29		0.00	0.00	0.00

### 27.5.1.3 *Persea* Species

OPERATIONAL INVENTORY: COMPILATION SHEET (FIXED-SIZE PLOT)								
1. CF Name : Tadongchen CF			4. Block Area:			425.16 Ha		
2. Block Name :			5. Compiling date:			05-03-2022		

3. No of plots : 68			6. Species group: <i>Persea</i>					
<i>col1</i>	<i>col2</i>	<i>col3</i>	<i>col4</i>	<i>col5</i>	<i>col6</i>	<i>col7</i>	<i>col8</i>	<i>col9</i>
		(3 decimals)	(3 decimals)	(3 decimals)	(0 decimals)	(2 decimals)	(2 decimals)	(2 decimals)
dbh class (cm)	class basal area (m2)	class volume (m3)	Plot size (ha)	Expansion factor	tally	nrha (stems/ha)	basha (m2/ha)	volha (m3/ha)
10-19	0.017	0.086	0.05	0.29	4	1.18	0.02	0.10
20-29	0.047	0.295	0.05	0.29	9	2.65	0.12	0.78
30-39	0.093	0.673	0.05	0.29	16	4.71	0.44	3.17
40-49	0.156	1.250	0.05	0.29	10	2.94	0.46	3.68
50-59	0.233	2.051	0.05	0.29	4	1.18	0.27	2.41
60-69	0.327	3.099	0.05	0.29	4	1.18	0.38	3.65
70-79	0.436	4.414	0.05	0.29	1	0.29	0.13	1.30
80-89	0.561	6.016	0.05	0.29		0.00	0.00	0.00
90-99	0.701	7.921	0.05	0.29	2	0.59	0.41	4.66
100-109	0.714	10.147	0.05	0.29	1	0.29	0.21	2.98

#### 27.5.1.4 Oak species

OPERATIONAL INVENTORY: COMPILATION SHEET (FIXED-SIZE PLOT)								
1. CF Name : Tadongchen CF			4. Block Area:			425.16 Ha		
2. Block Name :			5. Compiling date:			05-03-2022		
3. No of plots : 68			6. Species group:			Oak		
<i>col1</i>	<i>col2</i>	<i>col3</i>	<i>col4</i>	<i>col5</i>	<i>col6</i>	<i>col7</i>	<i>col8</i>	<i>col9</i>
		(3 decimals)	(3 decimals)	(3 decimals)	(0 decimals)	(2 decimals)	(2 decimals)	(2 decimals)
dbh class (cm)	class basal area (m2)	class volume (m3)	Plot size (ha)	Expansion factor	tally	nrha (stems/ha)	basha (m2/ha)	volha (m3/ha)
10-19	0.017	0.089	0.05	0.29	2	0.59	0.01	0.05
20-29	0.047	0.310	0.05	0.29		0.00	0.00	0.00
30-39	0.093	0.718	0.05	0.29	1	0.29	0.03	0.21
40-49	0.156	1.349	0.05	0.29	2	0.59	0.09	0.79
50-59	0.233	2.234	0.05	0.29	3	0.88	0.21	1.97
60-69	0.327	3.402	0.05	0.29	4	1.18	0.38	4.00
70-79	0.436	4.878	0.05	0.29	4	1.18	0.51	5.74
80-89	0.561	6.687	0.05	0.29	2	0.59	0.33	3.93
90-99	0.701	8.851	0.05	0.29	1	0.29	0.21	2.60
100-109	0.714	11.392	0.05	0.29	6	1.76	1.26	20.10
sum for all dbh classes								



### 27.5.1.5 *Michelia* Species

OPERATIONAL INVENTORY: COMPILATION SHEET (FIXED-SIZE PLOT)								
1. CF Name : Tadongchen CF			4. Block Area			425.16		
2. Block Name :			5. Compiling date			44625		
3. No of plots : 68			6. Species group			<i>Michelia</i>		
<i>col1</i>	<i>col2</i>	<i>col3</i>	<i>col4</i>	<i>col5</i>	<i>col6</i>	<i>col7</i>	<i>col8</i>	<i>col9</i>
		(3 decimals)	(3 decimals)	(3 decimals)	(0 decimals)	(2 decimals)	(2 decimals)	(2 decimals)
dbh class (cm)	class basal area (m2)	class volume (m3)	Plot size (ha)	Expansion factor	tally	nrha (stems/ha)	basha (m2/ha)	volha (m3/ha)
10-19	0.017	0.086	0.05	0.29		0.00	0.00	0.00
20-29	0.047	0.297	0.05	0.29		0.00	0.00	0.00
30-39	0.093	0.678	0.05	0.29		0.00	0.00	0.00
40-49	0.156	1.259	0.05	0.29	1	0.29	0.05	0.37
50-59	0.233	2.065	0.05	0.29		0.00	0.00	0.00
60-69	0.327	3.121	0.05	0.29	2	0.59	0.19	1.84
70-79	0.436	4.447	0.05	0.29	2	0.59	0.26	2.62
80-89	0.561	6.061	0.05	0.29		0.00	0.00	0.00
90-99	0.701	7.983	0.05	0.29	1	0.29	0.21	2.35
100-109	0.714	10.227	0.05	0.29	3	0.88	0.63	9.02
sum for all dbh classes								

### 27.5.1.6 Other Broadleaved Species

OPERATIONAL INVENTORY: COMPILATION SHEET (FIXED-SIZE PLOT)								
1. CF Name : Tadongchen CF			4. Block Area			425.16		
2. Block Name :			5. Compiling date			05-03-2022		
3. No of plots : 68			6. Species group			Other Broadleaf		
<i>col1</i>	<i>col2</i>	<i>col3</i>	<i>col4</i>	<i>col5</i>	<i>col6</i>	<i>col7</i>	<i>col8</i>	<i>col9</i>
		(3 decimals)	(3 decimals)	(3 decimals)	(0 decimals)	(2 decimals)	(2 decimals)	(2 decimals)
dbh class (cm)	class basal area (m2)	class volume (m3)	Plot size (ha)	Expansion factor	tally	nrha (stems/ha)	basha (m2/ha)	volha (m3/ha)
10-19	0.017	0.073	0.05	0.29	34	10.00	0.17	0.73
20-29	0.047	0.265	0.05	0.29	18	5.29	0.25	1.40
30-39	0.093	0.628	0.05	0.29	18	5.29	0.49	3.32
40-49	0.156	1.202	0.05	0.29	10	2.94	0.46	3.53
50-59	0.233	2.021	0.05	0.29	6	1.76	0.41	3.57
60-69	0.327	3.116	0.05	0.29	5	1.47	0.48	4.58

70-79	0.436	4.518	0.05	0.29	2	0.59	0.26	2.66
80-89	0.561	6.252	0.05	0.29	3	0.88	0.50	5.52
90-99	0.701	8.346	0.05	0.29	2	0.59	0.41	4.91
100-109	0.714	10.824	0.05	0.29	4	1.18	0.84	12.73
sum for all dbh classes								

## 27.5.2 N- Trees

### 27.5.2.1 Acer Species

OPERATIONAL INVENTORY: COMPILATION SHEET (FIXED-SIZE PLOT)								
1. CF Name : Tadongchen CF			4. Block Area:			425.16 Ha		
2. Block Name :			5. Compiling date:			05-03-2022		
3. No of plots : 68			6. Species group:			Acer		
col1	col2	col3	col4	col5	col6	col7	col8	col9
		(3 decimals)	(3 decimals)	(3 decimals)	(0 decimals)	(2 decimals)	(2 decimals)	(2 decimals)
dbh class (cm)	class basal area (m2)	class volume (m3)	Plot size (ha)	Expansion factor	tally	nrha (stems/ha)	basha (m2/ha)	volha (m3/ha)
10-19	0.017	0.113	0.05	0.29	0	0.00	0.00	0.00
20-29	0.047	0.334	0.05	0.29	1	0.29	0.01	0.10
30-39	0.093	0.691	0.05	0.29	0	0.00	0.00	0.00
40-49	0.156	1.199	0.05	0.29	0	0.00	0.00	0.00
50-59	0.233	1.839	0.05	0.29	1	0.29	0.07	0.53
60-69	0.327	2.642	0.05	0.29	2	0.58	0.19	1.53
70-79	0.436	3.605	0.05	0.29	0	0.00	0.00	0.00
80-89	0.561	4.733	0.05	0.29	1	0.29	0.16	1.37
90-99	0.701	6.026	0.05	0.29	0	0.00	0.00	0.00
100-109	0.714	7.491	0.05	0.29	5	1.45	1.03	10.86
sum for all dbh classes								

### 27.5.2.2 Persea Species

OPERATIONAL INVENTORY: COMPILATION SHEET (FIXED-SIZE PLOT)								
1. CF Name : Tadongchen CF			4. Block Area			425.16 Ha		
2. Block Name :			5. Compiling date			05-03-2022		
3. No of plots : 68			6. Species group			Persea		
col1	col2	col3	col4	col5	col6	col7	col8	col9
		(3 decimals)	(3 decimals)	(3 decimals)	(0 decimals)	(2 decimals)	(2 decimals)	(2 decimals)
dbh class (cm)	class basal area	class volume (m3)	Plot size (ha)	Expansion factor	tally	nrha (stems/ha)	basha (m2/ha)	volha (m3/ha)

	(m2)							
10-19	0.017	0.086	0.05	0.29	9	2.65	0.05	0.23
20-29	0.047	0.295	0.05	0.29		0.00	0.00	0.00
30-39	0.093	0.673	0.05	0.29	1	0.29	0.03	0.20
40-49	0.156	1.250	0.05	0.29		0.00	0.00	0.00
50-59	0.233	2.051	0.05	0.29		0.00	0.00	0.00
60-69	0.327	3.099	0.05	0.29		0.00	0.00	0.00
70-79	0.436	4.414	0.05	0.29		0.00	0.00	0.00
80-89	0.561	6.016	0.05	0.29		0.00	0.00	0.00
90-99	0.701	7.921	0.05	0.29		0.00	0.00	0.00
100-109	0.714	10.147	0.05	0.29	10	2.94	2.10	29.84
sum for all dbh classes								

### 27.5.2.3 Cinamomum Species

OPERATIONAL INVENTORY: COMPILATION SHEET (FIXED-SIZE PLOT)								
1. CF Name : Tadongchen CF			4. Block Area			425.16		
2. Block Name :			5. Compiling date			05-03-2022		
3. No of plots : 68			6. Species group			Cinnamomum		
col1	col2	col3	col4	col5	col6	col7	col8	col9
		(3 decimals)	(3 decimal s)	(3 decimals)	(0 decimal s)	(2 decimals)	(2 decimals)	(2 decimals)
dbh class (cm)	class basal area (m2)	class volume (m3)	Plot size (ha)	Expansion factor	tally	nrha (stems/ha)	basha (m2/ha)	volha (m3/ha)
10-19	0.017	0.066	0.05	0.29		0.00	0.00	0.00
20-29	0.047	0.264	0.05	0.29	1	0.29	0.01	0.08
30-39	0.093	0.670	0.05	0.29	2	0.59	0.05	0.39
40-49	0.156	1.352	0.05	0.29	1	0.29	0.05	0.40
50-59	0.233	2.372	0.05	0.29	1	0.29	0.07	0.70
60-69	0.327	3.789	0.05	0.29		0.00	0.00	0.00
70-79	0.436	5.662	0.05	0.29		0.00	0.00	0.00
80-89	0.561	8.045	0.05	0.29		0.00	0.00	0.00
90-99	0.701	10.996	0.05	0.29		0.00	0.00	0.00
100-109	0.714	14.567	0.05	0.29	5	1.47	1.05	21.42
sum for all dbh classes								

#### 27.5.2.4 Oak Species

OPERATIONAL INVENTORY: COMPILATION SHEET (FIXED-SIZE PLOT)								
1. CF Name : Tadongchen CF			4. Block Area			425.16 Ha		
2. Block Name :			5. Compiling date			05-03-2022		
3. No of plots : 68			6. Species group			Oak		
<i>col1</i>	<i>col2</i>	<i>col3</i>	<i>col4</i>	<i>col5</i>	<i>col6</i>	<i>col7</i>	<i>col8</i>	<i>col9</i>
		(3 decimals)	(3 decimals)	(3 decimals)	(0 decimals)	(2 decimals)	(2 decimals)	(2 decimals)
dbh class (cm)	class basal area (m2)	class volume (m3)	plot size (ha)	expansion factor	tally	nrha (stems/ha)	basha (m2/ha)	volha (m3/ha)
10-19	0.017	0.089	0.05	0.29	2	0.59	0.01	0.05
20-29	0.047	0.310	0.05	0.29	2	0.59	0.03	0.18
30-39	0.093	0.718	0.05	0.29	3	0.88	0.08	0.63
40-49	0.156	1.349	0.05	0.29	3	0.88	0.14	1.19
50-59	0.233	2.234	0.05	0.29	2	0.59	0.14	1.31
60-69	0.327	3.402	0.05	0.29		0.00	0.00	0.00
70-79	0.436	4.878	0.05	0.29	1	0.29	0.13	1.43
80-89	0.561	6.687	0.05	0.29	4	1.18	0.66	7.87
90-99	0.701	8.851	0.05	0.29	2	0.59	0.41	5.21
100-109	0.714	11.392	0.05	0.29	19	5.59	3.99	63.66
sum for all dbh classes								

### 27.5.2.5 Other Broadleaved Species

OPERATIONAL INVENTORY: COMPILATION SHEET (FIXED-SIZE PLOT)								
1. CF Name : Tadongchen CF			4. Block Area			425.16		
2. Block Name :			5. Compiling date			05-03-2022		
3. No of plots : 68			6. Species group			Other Broadleaf		
<i>col1</i>	<i>col2</i>	<i>col3</i>	<i>col4</i>	<i>col5</i>	<i>col6</i>	<i>col7</i>	<i>col8</i>	<i>col9</i>
		(3 decimals)	(3 decimals)	(3 decimals)	(0 decimals)	(2 decimals)	(2 decimals)	(2 decimals)
dbh class (cm)	class basal area (m2)	class volume (m3)	plot size (ha)	expansion factor	tally	nrha (stems/ha)	basha (m2/ha)	volha (m3/ha)
10-19	0.017	0.073	0.05	0.29	14	4.12	0.07	0.30
20-29	0.047	0.265	0.05	0.29	14	4.12	0.19	1.09
30-39	0.093	0.628	0.05	0.29	14	4.12	0.38	2.58
40-49	0.156	1.202	0.05	0.29	14	4.12	0.64	4.95
50-59	0.233	2.021	0.05	0.29	4	1.18	0.27	2.38
60-69	0.327	3.116	0.05	0.29	4	1.18	0.38	3.67
70-79	0.436	4.518	0.05	0.29		0.00	0.00	0.00
80-89	0.561	6.252	0.05	0.29		0.00	0.00	0.00
90-99	0.701	8.346	0.05	0.29	1	0.29	0.21	2.45
100-109	0.714	10.824	0.05	0.29	24	7.06	5.04	76.40
sum for all dbh classes								

## 27.6. Stand and Stock table (T Trees)

### 27.6.1 Number of Trees – T Trees

STAND & STOCK TABLE: NUMBER OF TREES														
1. Name of CF		: Tadongchen												
2. Block Name/No		: Tadongchen												
3. No of Sampling Units		: 68												
4. Estimated parameter		: Average Number of Trees per Ha												
Dbh class (cm). Write all values in 2 decimal														
Species group	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120+	total	%
Total conifer														
Acer	0.29			0.29	0.87	0.87	0.58	0.29		0.58			3.77	5.97%
Cinnamomum	0.59		1.18	0.29	1.18		0.59	0.59					4.42	7.00%
Persea	1.18	2.65	4.71	2.94	1.18	1.18	0.29		0.59	0.29			15.01	23.76%
Oak	0.59		0.29	0.59	0.88	1.18	1.18	0.59	0.29	1.76			7.35	11.63%
Michelia				0.29		0.59	0.59		0.29	0.88			2.64	4.18%
Other Broadleaf	10.00	5.29	5.29	2.94	1.76	1.47	0.59	0.88	0.59	1.18			29.99	47.47%
total broadleaf	12.65	7.94	11.47	7.34	5.87	5.29	3.82	2.35	1.76	4.69			63.18	100.00%
total all species	12.65	7.94	11.47	7.34	5.87	5.29	3.82	2.35	1.76	4.69			63.18	100.00%
%	0.20	0.13	0.18	0.12	0.09	0.08	0.06	0.04	0.03	0.07			100.00%	

### 27.6.2 Basal Area – T Trees

STAND & STOCK TABLE: BASAL AREA														
1. Name of CF		: Tadongchen CF												
3. Block Name/No		: Tadongchen												
3. No of Sampling Units		: 68												
4. Estimated parameter		: Average Basal Area per Ha (m2/ha)												
Dbh class (cm). Write all values in 2 decimal														
Species group	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120+	total	%
Total conifer														
Acer	0.005			0.045	0.203	0.284	0.253	0.163		0.414			1.37	10.14%
Cinnamomum	0.01		0.11	0.05	0.27		0.26	0.33					1.03	7.64%
Persea	0.02	0.12	0.44	0.46	0.27	0.38	0.13		0.41	0.21			2.44	18.10%
Oak	0.01		0.03	0.09	0.21	0.38	0.51	0.33	0.21	1.26			3.03	22.48%
Michelia				0.05		0.19	0.26		0.21	0.63			1.34	9.94%
Other Broadleaf	0.17	0.25	0.49	0.46	0.41	0.48	0.26	0.5	0.41	0.84			4.27	31.68%
total broadleaf	0.22	0.37	1.07	1.16	1.36	1.71	1.67	1.32	1.24	3.35			13.48	100.00%
total all species	0.22	0.37	1.07	1.16	1.36	1.71	1.67	1.32	1.24	3.35			13.48	100.00%
%	0.02	0.03	0.08	0.09	0.10	0.13	0.12	0.10	0.09	0.25			100.00%	

### 27.6.3 Volume – T trees

STAND & STOCK TABLE: VOLUME														
1. Name of CF		: Tadongchen CF												
3. Block name/No														
3. Number of Sample plots		: 68												
4. Estimated parameter		: Average Volume per Ha (m3/ha)												
Dbh class (cm). Write all values in 2 decimal														
Species group	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120+	total	%
total conifer														
Acer	0.03			0.35	1.6	2.3	2.09	1.37		4.34			12.08	8.31%
Cinnamomum	0.04		0.79	0.4	2.79		3.33	4.73					12.08	8.31%
Persea	0.1	0.78	3.17	3.68	2.41	3.65	1.3		4.66	2.98			22.73	15.63%
Oak	0.05		0.21	0.79	1.97	4	5.74	3.93	2.6	20.1			39.39	27.09%
Michelia				0.37		1.84	2.62		2.35	9.02			16.20	11.14%
Other Broadleaf	0.73	1.4	3.32	3.53	3.57	4.58	2.66	5.52	4.91	12.73			42.95	29.53%
total broadleaf	0.95	2.18	7.49	9.12	12.34	16.37	17.74	15.55	14.52	49.17			145.43	100.00%
total all species	0.95	2.18	7.49	9.12	12.34	16.37	17.74	15.55	14.52	49.17			145.43	100.00%
%	0.01	0.01	0.05	0.06	0.08	0.11	0.12	0.11	0.10	0.34			100.00%	



## 27.7. Stand and Stock table (N Trees)

### 27.7.1 Number of Trees – N Trees

STAND & STOCK TABLE SHEET 1 - NUMBER OF TREES													
1. Name of CF		: Tadongchen											
2. No of Plots		: 68											
3. Block Name		: Tadongchen											
4. estimated parameter		: Average Number of Trees per Ha											
Dbh class (cm). Write all values in 2 decimal													
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	%
Total conifer													
Acer		0.29			0.29	0.58		0.29		1.45		2.90	5.91%
Cinnamommum		0.29	0.59	0.29	0.29					1.47		2.93	5.97%
Persea	2.65		0.29							2.94		5.88	11.98%
Oak	0.59	0.59	0.88	0.88	0.59		0.29	1.18	0.59	5.59		11.18	22.78%
Michelia													
Other Broadleaf	4.12	4.12	4.12	4.12	1.18	1.18			0.29	7.06		26.19	53.36%
total broadleaf	7.36	5.29	5.88	5.29	2.35	1.76	0.29	1.47	0.88	18.51		49.08	100.00%
total all species	7.36	5.29	5.88	5.29	2.35	1.76	0.29	1.47	0.88	18.51		49.08	100.00%
%	0.15	0.11	0.12	0.11	0.05	0.04	0.01	0.03	0.02	0.38		100.00%	

### 27.7.2 Basal Area – N Trees

STAND & STOCK TABLE SHEET 2 - BASAL AREA													
1. Name of CF		: Tadongchen											
2. No of plots		: 68											
3. Name of Block		: Tadongchen											
4. estimated parameter		: Average Number of Trees per Ha											
Dbh class (cm). Write all values in 2 decimal													
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	%
Total conifer													
Acer		0.01			0.07	0.19		0.16		1.03		1.46	8.28%
Cinnamomum		0.01	0.05	0.05	0.07					1.05		1.23	6.97%
Persea	0.05		0.03							2.1		2.18	12.36%
Oak	0.01	0.03	0.08	0.14	0.14		0.13	0.66	0.41	3.99		5.59	31.69%
Michelia													
Other Broadleaf	0.07	0.19	0.38	0.64	0.27	0.38			0.21	5.04		7.18	40.70%
total broadleaf	0.13	0.24	0.54	0.83	0.55	0.57	0.13	0.82	0.62	13.21		17.64	100.00%
total all species	0.13	0.24	0.54	0.83	0.55	0.57	0.13	0.82	0.62	13.21		17.64	100.00%
%	0.01	0.01	0.03	0.05	0.03	0.03	0.01	0.05	0.04	0.75		100.00%	

### 27.7.3 Volume – N trees

STAND & STOCK TABLE SHEET 3 - VOLUME													
1. Name of CF		: Tadongchen											
2. No of plots		: 68											
3. Name of Block		: Tadongchen											
4. estimated parameter		: Average Number of Trees per Ha											
Dbh class (cm). Write all values in 2 decimal													
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	%
total conifer													
Acer		0.1			0.53	1.53		1.37		10.86		14.39	5.92%
Cinnamommum		0.08	0.39	0.4	0.7					21.42		22.99	9.46%
Persea	0.23		0.2							29.84		30.27	12.46%
Oak	0.05	0.18	0.63	1.19	1.31		1.43	7.87	5.21	63.66		81.53	33.55%
Michelia													
Other Broadleaf	0.3	1.09	2.58	4.95	2.38	3.67			2.45	76.4		93.82	38.61%
total broadleaf	0.58	1.45	3.80	6.54	4.92	5.20	1.43	9.24	7.66	202.18		243.00	100.00%
total all species	0.58	1.45	3.80	6.54	4.92	5.20	1.43	9.24	7.66	202.18		243.00	100.00%
%	0.00	0.01	0.02	0.03	0.02	0.02	0.01	0.04	0.03	0.83		100.00%	



