

ROYAL GOVERNMENT OF BHUTAN MINISTRY OF AGRICULTURE AND FOREST DEPARTMENT OF FORESTS AND PARK SERVICES WANGDUE FOREST DIVISION



"Walking the extra mile"

# DRAFT LOCAL FOREST MANAGEMENT PLAN

## FOR

# FOREST AREAS OUTSIDE FMUS AND PROTECTED AREAS

# DANGCHU GEOG

# WANGDUE DZONGKHAG

Period of the Plan: 01 JULY 2021 TO 30 JUNE 2031

Prepared by: Tshering Choden, Forestry Officer, Wangdue Forest Division

## 1 AUTHORITY FOR PREPARATION, REVISION AND APPROVAL PERIOD OF THE PLAN

This Local Forest Management Plan for Dangchu Gewog is valid for the period of 10 years from 01 July 2021 to 30<sup>th</sup> June 2031.

## AUTHORITY FOR PREPARATION, REVIEW AND APPROVAL

The authority for preparation of this plan was given to the Wangdue Forest Division, Department of Forest, Ministry of Agriculture, Royal Government of Bhutan.

#### APPROVAL

This plan was reviewed and recommended for implementation by Forest Resources Development Division, Department of Forests and Park Services (DoFPS) and approved by the Honourable Secretary, Ministry of Agriculture, Royal Government of Bhutan.

Prepared by approval:

Tshering Choden, FO Wangdue Forest Division

Technically reviewed and recommended for approval:

#### Checked and recommended for



Chief Forestrý Officer Wangdue Forest Division

#### Recommended for approval:

Chief Forestry Officer Forest Resources Management Division Department of Forests and Park Services Date: ..... Director Department of Forests and Park Services

Date: .....

APPROVED

Secretary Ministry of Agriculture Date: .....



#### Summary Results for Forest Management Area:

#### Dangchu

Unit		Δ	rea Distribution	Average	Aver. Stand		
Unit	Non Production	Protection	Production	Total	basal area	Volume	
ha	15.0	273.7	1569.8	1858.5	(m2/ha)	(m3/ha)	S
%	1%	15%	84%	100%	27.4	203	

Unit		Forest Type Distribution									
onne	Hemlock	Fir	Spruce	Mix. Con.	Bluepine	Chirpine	Hardwood	Mixed HC	Total		
%	16%	26%	0%	4%	0%	0%	5%	50%	100%		
Unit	Age distribution					Stand type distribution					
onne	young	immature	mature	Overmature	Total	plantation	natural	coppice	Total		
%	15%	22%	63%	0%	100%	0%	100%	0%	100%		
Unit	Canopy closure					Condition					
onne	dense	closed	open	unstocked	Total	good	average	poor	Total		
%	9%	68%	23%	0%	100%	39%	54%	7%	100%		

	Site Condition										
Unit	Slope			Erosiveness			Soil Cover				
onne	gentle	moderate	steep	stable	moderate	unstable	high	moderate	low		
%	50%	30%	20%	74%	22%	4%	36%	46%	18%		

	Forest Use										
Unit		Intensive Side L	Extensive Side Uses								
Onit	grazing	sokshing	lopping	grazing	sokshing	lopping					
ha	473.7	0.0	0.0	735.3	0.0	0.0					
%	25%	0%	0%	40%	0%	0%					

	NWFP Occurence and Firewood										
Unit	NWFP abundant					NWFP	sparse				
	Firewood	Bamboo	Cane	Daphne	Firewood	Bamboo	Cane	Daphne			
ha	622.5	716.5	0.0	406.5	544.1	270.6	0.0	306.2			
%	33%	39%	0%	22%	29%	15%	0%	16%			

	Potential Production									
Unit	Timber									
onne	Drashing	Cham	Tsim	Poles,posts	Total					
Ntot	16811	17936	6362	13748	54857					
N/ha	11	11	4	9	35					
m3	54585	19135	1989	1081	76790					
m3/ha	34.8	12.2	1.3	0.7	48.9					
Unit	Firewood									
onn	> 49cm	30-49cm	20-29 cm	10-19 cm	Total					
Ntot	10317	34258	42746	92697	180018					
N/ha	7	22	27	59	115					
m3	30008	28387	10602	6543	75540					
m3/ha	19.1	18.1	6.8	4.2	48.1					

		Sivi	cultural Measures		
Unit	Planting	Thinning	Felling (firewood)	Felling (timber)	No Activity
ha	0.0	37.0	695.0	875.2	249.5
%	0	2	37	47	13

Yield Regulation							
AAC	2510	m3					
AAC	1.6	m3/ha					
Prod. Potential / AAC	61	years					

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#### 2 BACK GROUND

The goal of National Forest Policy of Bhutan 2011 is to manage Bhutan's forest resources and biodiversity sustainably to produce wide range of social, economic and environmental goods and services for the equitable benefit of all the citizens and natural environment while still maintaining a minimum of 60% of the land under Forest Cover thereby contributing to Gross National Happiness and it emphasized on to bringing all State Forest Reserves land under management regimes focused on the sustainable supply of forest products and ecosystem services.

Sustainable management of forests using scientific principles was confined to FMUs. Whereas, it is found that unmanaged forest areas in Bhutan are under tremendous pressure and major portion of the annual timber supply are from these areas. The resource allocation in the rural areas are demand driven rather than on its sustainability and resource capacity and a good monitoring is not in place too, to assess the demand and supply of timber.

Dangchu Gewog has CFs and Park areas which are managed scientifically for sustainable forest resource management. But apart from these areas, huge portion of the Gewog is not brought under any kinds of Management Regimes.

Therefore, in view of the goal and objectives of the National Forest Policy, it is felt imperative to manage these forest resources on a long term sustainable manner rather than on conventional ad-hoc demand driven basis.

#### **3 OBJECTIVE**

The main objective of this plan is:

- 1. To bring the forest resources of Dangchu Geog under sustainable management regime (management and utilization).
- 2. To supply rural timber to the rural communities on sustainable basis.
- 3. To place management intervention for the improvement of natural resources within the Gewog through carrying out plantation with appropriate species and encouragement of natural regeneration.

This Forest Management Plan has been prepared by Tshering Choden, Forestry Officer, Wangdue Forest Division. Forest resource assessment has been carried out by field staff under the direct supervision of the Chief Forestry Officer, Wangdue Forest Division, in April 2021.

#### 4 GENERAL DESCRIPTION AND CURRENT SITUATION

#### 4.1 Location, Area and current status

#### 4.1.1 LOCATION



Dangchu gewog is located in the northern part of Wangdue Phodrang Dzongkhag falls between 27°41'29.97"N, 90°15'59.63"E to 27°30'31.15"N, 90° 6'53.47"E and 27°35'45.08"N, 90°14'46.07"Eto 27°36'42.46"N, 90° 8'27.24"E with an altitude range of 1540 to 4120 masl. The total area of 17152 hectares or 172 sq.km. It is bordered by the Kazhi in and Sephu Gewog in Northern and eastern parts, Gangtey and Bjenag gewog in the south, Nyisho gewog in the west. Dangchu Gewog in Wangduephodrang dzongkhag was considered one of the remotest Gewogs until it was electrified and feeder road was built from Nobding in recent times. The Gewog Center of Dangchu sited at the center of Danghu, which is 18.5 km away from the Wangue-Trongsa Highway. Nahi Gewog consists of five chiwogs namely Tashidingkha Zimi, Godraang Taagsar, Tokaling Tomla, Doongdoongnyelsa and Yusagang with an estimated population of 1700 people and 240 households.

All the villages are connected with farm roads which immensely assist in improving the living standard of the people. Almost all the households have access to mobile services which has increased the pace disseminating the information. The sanitation facilities such as access to clean drinking water and flush toilets are still underway. There are two schools; Dangchu Primary school and Norbding Lower secondary school, one ECR and one Grade II BHU under Dangchu Gewog.

#### 4.1.2 HISTORICAL BACKGROUND

The name of the place (Dangchu) holds miraculous historic and symbolic meaning from the time immemorial. The historic place is sacredly blessed by many divine personalities in the past. It was first visited and blessed by our 8th century Buddhist master, Guru Rinphoche. Guru mediated for three long months and blessed all the elements (earth, water and environment). It was then visited by our revered Buddhist Masters; Longchen Rabjam, Terton Ugyen Dorji Lingpa, Zhabdrung Ngawang Namgyel, Khenchen Sonam Yoedzer with crystal clear (Dang) devotion and blessed the running river (Chu) which undulates across the valley. Later during the 17th century, Zhabdrung officially approved the name the as Dangchupa (Dang- crystal clear, Chu-river, Pa- People) after having completed the construction of Wangdue Phodrang Dzong (Tshering, 2016, p. 78).

The Gewog abodes 16 Lhakhangs and many scared places (Nye) across the Gewog. Dangchu is popular for housing two holy rivers (Phochu and Mochu) to its neighboring districts; Bumthang, Trongsa, Punakha and Thimphu. Phochu/Wangchu has the spiritual power to heal eye sore and other diseases and it is believed to be the holy water of Guru Rinphoche. Mochu is said to be blessed by Guru Rinphoche and was further blessed by the Buddhist master Khenchen Sonam Yoedzer based on the prophecy. History reveals that having completed the renovation work of Chubar Stupa (which is located next to Gewog Center), an earthen pot filled with Mochu was placed as a brim inside the Stupa by the Khenchen. Surprisingly, the earthen pot filled with Mochu was discovered during the renovation work carried out by Agay Goleg sometimes in 1978. The divine river has the power to purify the internal and external defilements (Tshering, 2016, p. 78). Following are some of the important religious sites:

#### Chagkhey (Prakhey) Lhakhang

It is located on the south west direction of Godang Chiwog. It is a one hour up-hill walk from the nearest road point at the base of river Dangchu. There was no caretaker so visitors can't enter the Lhakhang. Further ahead is a sacred Guru site. Visitors are welcomed by an unending upward fissure through the base of the ridge, similar to a hydropower diversion tunnel. Guru Rinpoche is said to have meditated at this spot and subdued demons and other harmful demigods. A site where Guru in the form of a monkey is believed to have extracted holy water from the base of the cliff with the tail of a monkey can be seen towards the extreme left hand side.

It is scary and dark fissure where mammals like bats reside. Sharp and pointed rocks and some smooth objects resembling sacred artefacts are visible via torch light. A fragile ladder, made up of tree trunks is used as a scaffold to reach the next level. No one seems to have reached the exit point of this mystical fissure till date. But it is believed that a cat was sent through the tunnel exited from the other side of the ridge adjoining Boed Langdra Ney.

#### Zhabjee Lhakhang

One can reach Zhabjee Lhakhang by crossing Dangchu river via Dangchu Primary School and doing a one hour and 30 minutes uphill walk. Ahead of the Lhakhang, after a 15 minute walk, is a cave where Khandro Yeshi Tshogyel is said to have meditated. It is one of the most scared Lhakhangs in the region. However the surrounding area is currently filled with cow dung. It seems the place is used as a grazing land by the people nearby. The lhakhang is a single storey structure with a single room. A square shape rock surrounded by bushes and shrubs, on the right hand side of the Lhakhang has numerous footprints of Khandro Yeshi Tshogyel. For about 5 meters away from the door, stands a towering cypress tree that welcomes visitors with its great aroma. A small Chorten with an inscription of Terton Dorji Lingpa stands at its immediate distance. It is popularly known as Zhabjee Lhakhang as it has footprint of Guru Rinpoche as its sacred remnant.

It is believed that Guru Rinpoche with his religious dagger extracted a stream from the ridge, north ward of Lhakhang. The stream is said to have flown from the ridge downward to Dangchu river. When the stream reached the site where the Lhakhang is located today, it is said that a demoness crossed the stream. Thus, the stream could not continue to gush down and join Dangchu river. Then it is said that Guru subdued the demoness and so the robust footprint of Guru which is said to have been stamped on the back of demoness can be seen today inside the Lhakhang in the form of rock that resembles the demoness' back. The demoness' internal organs are said to have been splashed and it can still be seen on the exteriors of the Lhakhang wall. The Guru is said to have done this to benefit the nearby people for cultivating paddy in the vicinity. The gentle slope covered by high altitude shrubs and grasses, like paddy fields can be seen today as well. As it is believed that the demoness crossed the stream and the stream could not join Dangchu river the people of Dangchu gewog do not grow rice except wheat and other crops.

Guru Tsokhorsum is the central vestige of the Lhakhang. Though small in size yet its walls are beautiful with paintings of great figures. Amongst many others, figures such as, Lord Buddha, Zhabdrung Rinpoche, Drupchoen Thangthong Gyalpo, Doedjom Rinpoche, Jamyang Khentse Choki Loedroe, Meinling Khen Rinpoche, Drupjoed Rinpoche, Balay Trulku, Terton Dorji Lingpa, Bayru Tsana, etc, all seem to have been beautifully painted but have become faded over the time. There are few Thangkas hung which are worn out too. Few boxes, pots and other utensils are stored untidily.

#### Dangchu Wangchu

Dangchu Wangchu Menchu is located at an elevation of 2335 masl under the Dangchu gewog in Wangduephodrang Dzongkhag. It is about 18km drive from Nobding. The people workship and consider the spring as holy water (duetsi) and drinks for health benefits. This Menchu is believed to heal 13 different diseases.



#### 4.1.3 AREA STATEMENT

Land use and land cover map.



Land Use Type	Area (Ha)	Area Percentage (%)
Alpine scrubs	342.25	2.00
Broadleaf	5639.28	32.93
Built_up	10.96	0.06
Chhuzhing	43.54	0.25
Fir	1589.88	9.29
Kamzhing	269.54	1.57
Landslide	12.10	0.07
Meadows	353.19	2.06
Mixed Conifer	7068.19	41.28
Rivers	8.13	0.05
Shrubs	1640.20	9.58
Snow and Glaciers	145.69	0.85
TOTAL	17122.96469	100.00



Fig 1: Land Use and Land Type

#### 4.1.4 TOPOGRAPHY AND SLOPE

The average site condition is shown in the table below, the site condition for individual Blocks and compartments can be derived from Annex 1.

Slope	%	Erosiveness	%	Stability	%
Gentle	50	Stable	74	High	36
Moderate	30	Moderate	22	Moderate	46
Steep	20	Unstable	4	Low	18

Table 2: Average site condition

The forest management area generally comprises of gentle to moderate slopes. The areas with slopes greater than 45 degree (100 % slope) were exempted from timber allocation and designated as protection zone using QGIS. Drainage is towards the Dangchu River in the south. A buffer of 150 meters on either side of national highways and 20 meters on either side of farm roads is also maintained. Rivers and streams were given a buffer of 30m, within which no harvesting was allowed to prevent soil erosion and to protect the riparian zones. Within a circle of 100m radius around the monasteries no trees shall be marked for felling.

#### 4.1.5 ACCESSIBILITY

Dangchu gewog is connected to the Wangdue-Trongsa National highway by a 18.5 km farm road from Nobding. The farm road extends to all the Chiwog under the Gewog. Areas that are far from the settlement/farm roads are designated as inaccessible areas. Owing to the distance the local residents have not explored these areas for timber extraction as it will require more time, energy and expenditure. Most of the inaccessible areas in the Northern parts of the gewog have very steep terrain (slope greater than 45 degree), where timber extraction is not feasible. The people usually opt for timber/firewood/poles from the community forest and the rural house building timber for the Gewog is mostly allotted from Phobji Gewog as the areas with desired sized and species of timber has already been harvested over the past years.

#### 4.1.6 FOREST USE AND NWFP

The occurrence of NWFP in the forest management area is shown in the table below, for the distribution by Block and compartment refer to Annex 1 and 2.

NWFP	Abundant (%)	Sparse (%)	Forest Uses	Intensive (%)	Extensive (%)
Bamboo	39	15	Grazing	25	40
Cane	0	0	Shoksing	0	0
Daphne	22	16	Lopping	0	0

Table 3: Occurrence of NWFP and important forest uses

Mushrooms and medicinal plants like *Paris polyphylla* and *Picorrhiza spp.* are also collected for self-consumption. Bamboos are collected for fencing and for making bamboo products. People of Dangchu Gewog are issued permits for collecting cordyceps (*Ophio cordyceps sinensis*). Cordyceps is collected in the months of May-July. It is the main source of income for the households under Tassa Chiwog.

#### 4.1.7 PAST AND CURRENT FOREST MANAGEMENT HISTORY

Fir, Bluepine and Spruce are the tree species that are used as RHBT in Dangchu Gewog. Quercus spps., and Alunus spp. are allotted as firewood and fencing post. In the past years, Dangchu Gewog had rich timber resources and not only the local residents, people from other Gewogs and Dzongkhags also opted for timber from Dangchu Gewog. There was rampant illegal logging in the Gewog in the year 2005-2006. Therefore, presently the Gewog has very scarce timber resources and the local residents opt for RHBT mostly from Phobji Gewog and other neighbouring Gewogs. The local residents collect firewood and fencing posts from the CFs and areas which are at close proximity to settlements.

#### 4.1.8 **POPULATION AND DEMOGRAPHY**

The following villages and settlements are located in the forest management area:

Village Name	No. of Households	No. of Persons
Doongdoongnyelsa	90	550
Yusagang	20	110
Tashidingkha Zimi	48	334
Godraang Taagsar	45	519
Tokaling Tomla	37	230
Total	240	1743

*Table 4: Population and demography* 

Dangchu Gewog consists of Tashidingkha Zimi, Godraang Taagsar, Tokaling Tomla, Doongdoongnyelsa and Yusagang with an estimated population of 1743 people and 240 households.

#### 4.1.9 FARMING AND AGRICULTURE

Potato and Chilli cultivation dominates among other agriculture farming activities. Other vegetables such garlic, mustard, spinach, radish, etc are also cultivated and marketed. The people also raise livestock and sells the excess livestock products like eggs, cheese,butter, milk, etc., after self-consumption.



Fig 2: Land Use



Fig: Vegetable Total Production



Fig 3: Cereals and oilseeds production



Fig 4: Livestock population

Table 5: Livestock Products

Products	Unit	<b>Total Production</b>
Butter	Kg	10967
Cheese	Kg	19727
Egg	Nos.	101600
Pork	Kg	200
Fresh milk	Liters	219042

Source: Gewog Level Data 2018-2019

#### 4.2 Ecology

#### 4.2.1 FOREST TYPES AND CONDITION

The major part of the Forest Management Area lies in the Mixed conifer zone (58%) followed by Broadleaf (30%) and Fir (12%). The distribution of the forest types is shown in the graph below. The general condition of the forest is good to average. Close to villages, the forest condition is poorer due to intensive use. Forest type distribution as well as forest condition and canopy closure per compartment can be derived from the respective compartment sheet in Annex 1.

The average standing volume is 203 m<sup>3</sup>/ha and the average basal area is 27.4 m<sup>2</sup>/ha. The forests are immature (22%) to mature (63%).

The Forest Management Area Comprises of the following forest types:



Fig 5: Forest Types and Condition

#### 4.2.2 FLORAL SPECIES COMPOSITION

Mixed conifer forest is the dominating forest type in the management area. Mixed conifer forest comprises of Hemlock and Fir stands with Rhododendron as associate species at the higher altitudes. Dunddungneysa and Eusagang blocks are mainly composed of Broadleaf forest with scattered patches of conifer species. The Broadleaf forests mainly consists of *Quercus spps., Acer spps., Betula spps.* and *Alnus nepalensis*.

#### 4.2.3 FAUNAL SPECIES COMPOSITION

During field enumeration evidences on presence of endangered species such as Red panda (Ailurus fulgens) and Musk deer (Moschus chrysogaster) were also found in higher elevations of

Tashidingkha and Dungdungneysa blocks. It is said that the population of Musk deer has decreased drastically over the years due to illegal poaching. Numerous traps were encountered during the field enumeration. The management area is also a habitat for the Bengal Tiger (*Panthera tigris tigris*). Himalayan Black bear, wild boar, Sambar, barking deer, Kalij pheasant were found in abundance and are a menace to the famers.

#### 4.3 Socio Economics

#### 4.3.1 COMMON SOURCES OF INCOME

The 5 chiwogs under Dangchu Gewog consists of population who are dependent of farming and livestock as a source of their livelihood with few employed in government service and some in monk and army. The local communities are farmers having individual landholdings. People of Dangchu are well-off for having access to cordyceps collection as their major source of income. Cash crops such as chillies, potatoes, garlic, wheat and barley are grown and livestock products are sold to supplement their income for living. All the villages are connected with farm roads which immensely assist in improving the living standard of the people. Most of the household income is used for food, religious ceremonies and clothing followed by expenditure on their children's education.

#### 5 FOREST MANAGEMENT

#### 5.1 Areas excluded from the Management Plan

The total area of Dangchu Gewog is *17122.96* ha comprising mainly of Mixed conifer forest, followed by Broadleaf and Fir forest. Biological Corridor-08 falling within the Gewog area has been included in the current management area. The areas, which are already managed for another purpose, are excluded from this plan. Therefore the total area excluded from this plan constitutes the total area of CFs within the Gewog and a part of WCNP, which adds up to 1419.436 ha.

Areas excluded from the management plan are:

Community	Forest	Park					
Name	(ha)	Name	(ha)				
Tassar Pelgi Dorji CF	50.56	Wangchuck Centennial National Park	1025.311				
Rida CF	80.45						
Yuesargang CF	103.0040191						
Chubar CF	160.1107						
Total	394.1247		1025.311				

Table 6: Areas excluded from the management plan

#### 5.2 Local Forest Management Area

The total Local Forest Management Area for this plan period is 6388.699 ha which comprises of *"Future Management Area"* and *"Current Management Area"* the details of which are given in the following section.

#### 5.2.1 FUTURE MANAGEMENT AREA

A total of 13845 ha of Gewog area are demarcated as "Future Management Area" as these areas are not accessible due to its distance from the nearest road head. People don't opt for timber from these areas as timber extraction from these areas will require more time, energy and expenses. These areas may be harvested in future with road construction.

#### 5.2.2 CURRENT FOREST MANAGEMENT AREA

A total of 1858.24 ha of Forest area within the Gewog shall be managed in this current plan period. It comprises of following categories.

Area (ha)	Туре
14.970	Non Production Area <sup>1</sup>
273.665	Protection Zones
1569.605	Production Areas
1858.24	Total

Table 7: Current Forest Management Area

#### 5.3 Siviculture measures

Most of the timber demand is fulfilled from Phobji and other neighbouring Gewogs. People collect firewood from the areas adjacent to the settlements and cattle are allowed to graze freely in the forest nearby. The dominating Silviculture measure is timber use (47%), followed by firewood use (37%). Most of the accessible areas with good timber stocks have already been harvested in the past years. The areas with no activity are the areas that are either inoperable due to its terrain or accessibility. The distribution of silviculture measures throughout the forest management area is shown in the graph below. The silviculture measures for each individual compartment can be derived from the compartment register and from the forest management map.

<sup>&</sup>lt;sup>1</sup> This comprises of areas which are excluded from timber production which are located within forest management area.



Fig 6:Silvicultural measures

#### 5.4 Yield Regulation

The sustainable annual allowable cut AAC<sub>sust.</sub> for the management area is calculated as follows: AAC<sub>sust</sub> = Production area (ha) X Avg.Standing volume ( $m^3/ha$ )

Avg Rotation Age

AAC<sub>sust.</sub>= 2510 m<sup>3</sup>/year

#### The Annual Allowable Cut for the Dangchu forest management area is fixed at 2510 m<sup>3</sup>.

The AAC per ha is  $1.6 \text{ m}^3$  and the Potential Production Period is 61 years.

#### 5.5 Demand/Supply Assessment

The rural timber demand of the geog has been calculated as the average of the actual wood allotment from 2011 to 2020. The data were derived from the "geog register" of the Divisional Forest Office. The annual timber supply potential is calculated by dividing the total production potential (in number of trees) by the Potential Production Period.

Potential Production Period is the number of years it will take to use up the production potential with the fixed AAC.

Product	Total Production Potential	Sustainable Annual Supply Potential*	Annual Demand	Demand -Supply
Drashing/shingleps	16811	275	28	+247
Chams	17936	294	52	+241
Tsims	6362	104	52	+52
Poles	13748	225	315	-90

*Table 8: Timber demand/supply scenario in number of trees* 

\*Remark: the total production potential is divided by the Potential Production Period which is 61 years.

Where,

- 1. **Total Production Potential for individual products in terms of numbers** can be derived from the summary sheet.
- 2. Sustainable Annual Supply potential = <u>Total Production Potential</u>

Potential production period

- 3. **Annual Demand**: annual demand of the product assessed from the past allotment trend in the Gewog. Can be derived from the Gewog Register.
- 4. **Demand-** Supply = Difference of Demand and sustainable annual supply potential which gives an idea about whether there surplus supply or shortage of the products.

Drashing, chams and tsims can be supplied from the forest management area. Shortage is for poles which however can be compensated by the surplus of the larger trees (yield is controlled in terms of volume).

Firewood demand is calculated in truckloads. To compare it with the supply potential it has to be converted into standing volume equivalent. The conversion factor applied is:

*1 truckload is equivalent to 8 m<sup>3</sup> standing volume.* 

Total Production Potential (Volume <sub>tot</sub> )	Annual Supply Potential*	Annual Demand	Demand -Supply
75540	1238	31	+1207

\*\*Remark: the total production potential is divided by the Potential Production Period which is 61 years

1. Total Production Potential (Volume tot) can be derived from the summary sheet.

#### 2. Sustainable Annual Supply potential = <u>Total Production Potential</u>

#### Potential production period

- 3. **Annual Demand**: annual demand of the product assessed from the past allotment trend in the Gewog. Can be derived from the Gewog Register.
- 4. **Demand- Supply** = Difference of Demand and sustainable annual supply potential which gives an idea about whether there surplus supply or shortage of the products.

The annual supply potential is considerably higher than the average annual demand of firewood of the last 10 years.

Whenever possible the wood demand of one village should be allotted from the corresponding village intervention zone (compartment).

#### 6 IMPLEMENTATION OF THE PLAN

#### 6.1 Plan Implementation

The Department of Forests and Park Services is vested with the responsibility of protection and management of forest resources in Bhutan. In the field, the territorial division is mandated by the Department to discharge the responsibility of implementing and monitoring all the activities mentioned in the plan. The Chief Forestry Officer of Wangdue Division will be responsible for implementation of this Management Plan. The Chief Forestry Officer, Wangdue will be assisted by the Forest Range Officer, Nobding and other staffs of the Range for effective implementation of this plan.

Adequate records will be maintained by the Nobding Range Office in the form of Tree Marking Book and Gewog Register as per the guidelines under Local Forest Area Management of Forest Management Code of Bhutan 2020.

The annual allotment of timber from the Geowg will not exceed the AAC prescribed in this plan under any circumstances. Any allotment over and above the AAC shall be made only upon due approval of the CFO, Wangdue. The surplus volume allotted over and above the AAC shall be adjusted in the AAC of the subsequent year without fail.

#### 6.2 Tree Marking and Silviculture

Tree marking is done in accordance with the "Tree Marking Guidelines" and the "Silvicultural Guidelines" prescribed by the Department of Forests.

The silvicultural system applied is single tree selection system. The principle of negative selection is applied in all tending and thinning operations. Marking of mature trees for felling is permitted only, when the immediate vicinity is sufficiently regenerated and the regeneration can grow up (low grazing pressure).

Grazing shall be controlled in all over-mature forests which are in the stage of natural regeneration.

Un-stocked and sparsely stocked parts shall be re-planted with principal local species (species selection according to prevalent forest type).

#### 6.3 Monitoring

Monitoring is the continuous/periodic review undertaken by management at every level of implementation of an activity to ensure that input deliveries, work schedules, targeted output and other required actions are proceeding according to the plan. It also ensures important control of the AAC. The CFO, Wangdue will ensure that monitoring is carried out on an annual basis according to Vol III, Chapter III (Local Forest Management Planning), Section 3.11(Monitoring).of the Forest Management Code of Bhutan 2020.

Further the Chief Forestry Officer will ensure to submit annual monitoring reports latest by 28<sup>th</sup> of February every year as per the provision of Forest Management Code of Bhutan 2020

# Annex 1

## Compiled Results by Compartments

		bution, Basal Ar	ea and No	<u> </u>	Distribution		agement A		Gakidling
Comp	Sub	-Compartment	<b>.</b>	BA	No. of				
N.	No.	N	Non Forest	Ductostion	Inoperable	Productio n	Tatal	(	Plots
<b>No.</b>		Name Relangthang 1	Forest	12.5	10.2	46	Total 68.7	(m2/ha) 18	0
1		Relangthang 2		12.3	10.2		100	15.9	9
1		Relangthang 3		12.3	13.4	19.5	50	13.9	5
2		Muga		6.3	5.9		118.8	5.1	18
2		Deoralidara		12.5	10.7	64.3	87.5	11.3	18
2		Dungdungy		12.3	10.7	78	78	16.2	12
2		Sheer		43.8	29.2	58.3	131.3	7.3	12
2		Below Gatwal 1		6.3	5.9	87.9	100.1	13.5	15
2		Below Gatwal 2		18.8	15	60	93.8	14.3	12
2		Ganghatry		6.3	5.7	63	75	9.8	11
2		Kagaty		31.3	22.1	52.9	106.3	13.5	11
2	i	Muga Village		25	22.1	110.3	156.3	13.3	21
2	i	Bemberidara		18.8	15.6	78.1	112.5	15	15
3		Changay area 1		12.5	10.8	70.4	93.7	9.1	13
3		Changay area 2		12.5	10.0	106.3	106.3	11.9	13
3		Changay area 3		6.3	5.6	44.4	56.3	21	8
3		Changay area 4		12.5	8.9	22.3	43.7	8.4	5
3		Pahkheybari		18.8	15.2	66	100	10.5	13
3		Above Char 1		18.8	14.7	54	87.5	23.5	11
3		Above Char 2		56.3	17.3	7.7	81.3	16.5	4
4		Muga 1		18.8	14.7	54	87.5	21.3	11
4		Gangatay area		50	30	45	125	15.2	12
4		Muga area		75	15	3.8	93.8	8.7	3
4		Kagatay area		18.8	12.5	25	56.3	12.5	6
5		Hilley area 1		37.5	17	14.2	68.7	8	5
5		Hilley area 2		12.5	8.9	22.3	43.7	14.4	5
5		Hilley area 3		25	15.9	27.8	68.7	15.4	7
5		Hilley area 4		25	13.9	17.4	56.3	108	5
5		Hilley area 5		37.5	15	10	62.5	10	4
5		Hilley area 6		37.5	20.2	23.6	81.3	8	7
5	g	Hilley area 7		31.3	11.7	7	50	8.7	3
6		Bisty 1		25	17.9	44.6	87.5	12.6	10
6		Bisty 2		18.8	13.6	36.4	68.8	10.8	8
6	с	Laring top				62.5	62.5	6.6	10
6		Kamidara		18.8	15.8	84.2	118.8	10.4	16
6		Sixty 1		25	19.7	74	118.7	11.1	15
6		Sixty 2		12.5	10.8	70.4	93.7	8.3	13
6	g	Below Bisty 1		68.8	26.7		112.5		
6		Below bisty 2		12.5			56.2	12	2
7	a	Relangthang I		6.3	5.4	32.1	43.8	24	6
7		Relangthang II		18.8		54	87.5		11
7		Relangthang III		31.3	23	64.5	118.8	11.6	14
7		Relangthang IV		18.8	14.4		81.3		10
7	e	Above Bisty 1				68.8	68.8	10.5	11
7		Above Bisty 2				31.3	31.3		5
7	g	Above Bisty 3		6.3	5.8	81.7	93.8	6.3	14

Comp	Sub	-Compartment		Area	Distribution	n (ha)		BA	
			Non Forest			Productio			No. of Plots
No.	No.	Name	Area	Protection	Inoperable	n	Total	(m2/ha)	
1	Relan	gthang A		43.8	37.3	137.6	218.7	16.0	28
2	Muga	А		169.1	131.1	759.4	1059.6	11.8	142
3	Chang	gay		125.2	72.5	371.1	568.8	13.8	71
4	Muga	В		162.6	72.2	127.8	362.6	17.1	32
5	Hilley	T		206.3	102.6	122.3	431.2	25.3	36
6	Bisty			181.4	138.5	398.8	718.7	10.0	74
7	Relan	gthang B		81.5	63.3	380.5	525.3	14.8	71
Total p	er Ge	wog		969.9	617.5	2297.5	3884.9	13.6	454

### Explanations of abbreviations used in the compartment records

All information and data indicated in the sub-compartment record are related to the <u>operable production area</u> only.

А	abundant occurrence of NWFP
Bas. Area (m²/ha)	basal area per ha of the sub-compartment
Dbh	diameter breast height
E	extensive forest use
Height 0,3<1.3m	number of trees of this height class
I	intensive forest use
m <sup>3</sup>	total standing volume in m3
N/ha	number of trees per ha
Ntotal	total number of trees of the sub-compartment
S	sparse occurrence of NWFP
Volume (m3/ha)	standing volume per ha of the sub-compartment
Volume conifer %	percentage of conifers in relation to the standing volume

### Annex 2 Compartment Register

					Com	partm	nent	Rec	ord									
Geog	Dang	chu		Block		ndungne				k No		1	C	Com	p. No			I
						Area	s in ł	na										
Non producti	on			Prote		95.5					oductior	1					11.	5
						npositi						-				_		
Mixed HC with		k fores	st and	young rl	nodo sta	nds. Clos	sed to	open	canop	/ with	good t				Stand o		1	40.0
average condi	uon.											-			(m2/ha)	a)		16.2
															n3/ha) onifer %	6		114.3
	<i></i>						For	est Typ	e S	6 St	and Type		%		FP+firev		Α	s
250	of trees/ha	a by dian	neter c	lass (dbh>	10cm)			nlock	4		antation			Тур			%	%
							Fir	uce			atural		100		wood nboo	_	60 70	30
200 -								ed Conif	ər		anopy		%	Car				
								e Pine			ense			Dap	hne		30	20
150 -								r Pine dwood			osed ben		70 30					
100 -								ed H/C	6		stocked			For	est Use		T	Е
							-	e Class			ondition		%	Тур			%	%
50 -							- You Imn	ing nature			ood rerage		30 50		zing Ikshing	+	90	10
							Mat			60 Pc			20		ping			
0 10<20 20<	//////,	(//////////////////////////////////	50<6	60<70	70<80	30<90 90		ermature			Site Char					_		
■Other Broa     ØAcer		■Rhodo ∎Oak	odend		Betula Other Co	nifers	Slo				osivenes able	S	% 40	Soi Hig	l Cover		_	% 10
☐ Fir ■Bluepine		Spruc Chirpi			Hemlock			derate			oderate		50		derate			30
Bidepine						NI/I	Ste	ep diame	tor olo	-	stable		10	Low				60 m)
Species		Heig 0.3<1	-	<10	10<20		-	-	-		0 70<80	80<	90 9	90+	Tota N/ha			//////////////////////////////////////
Chirpine																		
Bluepine			74	74				1					_			47		
Hemlock Spruce			71	71	11		2	1					2			17		5
Fir																		
Other Conifers																		
Oak Acer			106 141	106	45	16	4	8			0		_			74		22
Betula			1 - 1 - 1	100	11	10		3					_			14		4
																		33
Rhododendron			460	1733	102	8	2									12		
Other Broadlea	ves				68	16	17	14	4				0		1	21		36
Other Broadlea Total			778 Futi	1910 J <b>re M</b> a	68 238 nagen	16 41 nent &	17 25 Moi	25 nitor	4 ing c	f Ac	i 1 tivitie		3	do t	1	21 338		36 100
			778 Futi	1910 J <b>re M</b> a	68 238 nagen	16 41 nent &	17 25 Moi	25 nitor	4 ing c	f Ac	i 1 tivitie		3	eds t	1	21 338	ed.	36 100
Other Broadlea Total Felling of the r Productio	matured a	stands tial (N,	778 Futu of bo	1910 Jre Ma oth hemlo	68 238 nagen ock and r	16 41 nent & nixed HC	17 25 Moi is rec	25 nitori comme	4 ing c ended to be i	f Ac	I 1 tivitie sive gra	azin( n ye	3 g nee		1 3 o be re	21 338 educ		36
Other Broadlea Total Felling of the r Productic	natured a natured a natured a natured a natured a nature	stands tial (N, N/ha	778 Futi of bo	1910 Jre Ma oth hemico th hemico (m3)	68 238 nagen	16 <b>41</b> nent &	17 25 Moi is rec	25 nitori comme	4 ing c ended to be i	f Ac	I 1 tivitie sive gra	azin( n ye	3 g nee		1	21 338		36 100
Other Broadlea Total Felling of the r Productio	matured a	stands tial (N,	778 Futu of bo	1910 Jre Ma oth hemlo	68 238 nagen ock and r	16 41 nent & nixed HC	17 25 Moi is rec	25 nitori comme	4 ing c ended to be i	f Ac	I 1 tivitie sive gra	azin( n ye	3 g nee		1 3 o be re	21 338 educ		36
Other Broadlea Total Felling of the r Productic Product size Orashing Firewood	natured a natured a natured a natured a natured a nature	tial (N, N/ha 2 3 1	778 Futi of bo	1910 JITE Ma Doth hemlo (m3) 123 77 18	68 238 nagen ock and r	16 41 nent & nixed HC	17 25 Moi is rec	25 nitori comme	4 ing c ended to be i	f Ac	I 1 tivitie sive gra	azin( n ye	3 g nee		1 3 o be re	21 338 educ		36
Other Broadlea Total Felling of the r Production Product size G Trashing Firewood Firewood Firewood Firewood Firewood Firewood Firewood	natured a natured a natured a natured a natured a nature	tial (N, N/ha 2 3	778 Futi of bo	1910 JITE Ma Doth hemlo (m3) 123 77	68 238 nagen ock and r	16 41 nent & nixed HC	17 25 Moi is rec	25 nitori comme	4 ing c ended to be i	f Ac	I 1 tivitie sive gra	azin( n ye	3 g nee		1 3 o be re	21 338 educ		36
Other Broadlea Total Felling of the r Production Product size G Trashing Firewood Firewood Firewood Firewood Firewood Firewood Firewood	natured a natured a natured a natured a natured a nature	tial (N, N/ha 2 3 1	778 Futi of bo	1910 JITE Ma Doth hemlo (m3) 123 77 18	68 238 nagen ock and r	16 41 nent & nixed HC	17 25 Moi is rec	25 nitori comme	4 ing c ended to be i	f Ac	I 1 tivitie sive gra	azin( n ye	3 g nee		1 3 o be re	21 338 educ		36
Other Broadlea Total Felling of the r Productic Product size G Product size Firewood	natured 3 n Poten N total 20 34 14 154	tial (N, N/ha 2 3 1 13	778 Futi of bo	1910 ure Ma bth hemlo (m3) 123 77 18 185	68 238 nagen ock and r	16 41 nent & nixed HC	17 25 Moi is rec	25 nitori comme	4 ing c ended to be i	f Ac	I 1 tivitie sive gra	azin( n ye	3 g nee		1 3 o be re	21 338 educ		36
Other Broadlea Total Felling of the r Productic Product size G C Preduct size G C Firewood Firewood C Firewood	natured 3 n Poten N total 20 34 14 154 154 130	tial (N, N/ha 2 3 1	778 Futi of bo	1910 JITE Ma Doth hemlo (m3) 123 77 18	68 238 nagen ock and r	16 41 nent & nixed HC 2022	17 25 Moi : is rec 2023	25 nitori comme 2024	4 ing o anded to be 1 2025	emov 2026	ed eacl	azin( 202	3 3 nee ar 28 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		1 3 o be re	21 338 educ		36
Other Broadlea Total Felling of the r Productic Product size G Constraints Firewood	natured 3 n Poten N total 20 34 14 154 154 130	tial (N, N/ha 2 3 1 13 13 13	778 Futu of bo % 49 49 49 2	1910 Jre Ma Joth hemlo (m3) 123 77 18 185 9 9	68 238 nagen ock and r 2021	16 41 nent & nixed HC 2022	177 25 Moi : is rec 2023 ea in t	25 nitori comme 2024	4 ing c ended	emov 2026	ed per	azin( 202	3 3 nee	029	1 3 0 be re 2030	21 338 educ	tal	36
Other Broadlea Total Felling of the r Productic Product size G C Preduct size G C Firewood Firewood C Firewood	natured 3 n Poten N total 20 34 14 154 154 130	tial (N, N/ha 2 3 1 13	778 Futu of bo % 49 49 49 2	1910 ure Ma bth hemlo (m3) 123 77 18 185	68 238 nagen ock and r	16 41 nent & nixed HC 2022	17 25 Moi : is rec 2023	25 nitori comme 2024	4 ing c ended	emov 2026	ed per	azin( 202	3 3 nee		1 3 0 be re 2030	21 338 eeduc	tal	36 100 %
Other Broadlea Total Felling of the r Productio Product size Product size Prewood Firewood Firewood Poles, etc. Firewood Silvicultural Mo Measure Planting Thinning	natured a natured a natured a natured a natured a natured a nature	tial (N, N/ha 2 3 1 13 1 11 Area	778 Futt of bo Voluu % 49 49 49 2 (ha)	1910 ure Ma oth hemlo (m3) 123 77 18 185 9 9	68 238 nagen ock and r 2021	16 41 nent & nixed HC 2022	177 25 Moi : is rec 2023 ea in t	25 nitori comme 2024	4 ing c ended	emov 2026	ed per	azin( 202	3 3 nee	029	1 3 0 be re 2030	21 338 eeduc	tal	36 100 %
Other Broadlea Total Felling of the r Productio Product size G Drashing Firewood Fir	natured a natured a natured a natured a natured a natured a nature	tial (N, N/ha 2 3 1 13 11 11 Area 32	778 Futt of bo % 49 49 49 2 (ha)	1910 ure Ma oth hemlo (m3) 123 77 18 185 9 9 in % 30	68 238 nagen ock and r 2021	16 41 nent & nixed HC 2022	177 25 Moi : is rec 2023 ea in t	25 nitori comme 2024	4 ing c ended	emov 2026	ed per	azin( 202	3 3 nee	029	1 3 0 be re 2030	21 338 eeduc	tal	36 100 %
Other Broadlea         Total         Felling of the r         Felling of the r         Product size         Product size         Product size         Drashing         Firewood         Firewo	natured a natured a natured a natured a natured a natured a nature	tial (N, N/ha 2 3 1 13 1 11 Area	778 Futt of bo % 49 49 49 2 (ha) 1.5	1910 ure Ma oth hemlo (m3) 123 77 18 185 9 9	68 238 nagen ock and r 2021	16 41 nent & nixed HC 2022	177 25 Moi : is rec 2023 ea in t	25 nitori comme 2024	4 ing c ended	emov 2026	ed per	azin( 202	3 3 nee	029	1 3 0 be re 2030	21 338 eeduc	tal	36 100 %

						Com	partn	nent	Rec	ord								
G	leog	Dang	chu		Block	Du	ngdungne	<i>.</i>		Bloc	k No		1	C	Com	p. No		II
					Dut			s in h	na									0
-	Non productio	n			Prote		24.4	00.0	nd D	000		oduction	1				9.9	9
N.4.5	red conifor fr	o root w	the	n a rh							-		_			Stand a	lata	
				•						•	•			Bas				18.5
90.		e oona		latara	li regenei		mateu	<i>by</i> yot	ang run	000 0	unuo	•	-				<u> </u>	133.4
													-			,	_	37%
	N	<b>.</b>				40		For	est Type		∕₀ S <sup>•</sup>	tand Type		%	NW	/FP+firew	. А	S
300		f trees/ha	a by diar	neter c	lass (dbh>	10cm)			nlock								%	%
000									100	7	-			100	_		75	25
250										er				%			100	
200								Blue	e Pine		D	ense			Dap	ohne		75
								-	-					50	_		_	
150										2					For	est Use		Е
100											_			%			%	%
									•	2			_	25		0	100	
50																	——	
0				Ø.				Ove					acter		Lop	ping		
Г		leaves	■Rhod		ron 🛛	Betula			ре	9			s	%	Soi	l Cover		%
				e			nifers							25			_	75
											-			75	-			75 25
Sn	ecies						N/	ha per	diame	ter cla	ss					Tota		· /
			0.3<1	.3 m	<10	10<20	20<30	30<40	40<50	50<60	60<7	0 70<80	80<	90 9	90+	N/ha		%
														_			_	
				265										4			4	1
Spr	uce																	
Fir						28				6		2		1			37	9
Otr Oa																	—	
Ace				177				5		2							7	2
Bet	ula					28			9									10
					88													50
Otr Tot		es			88									4				28 100
10								-	-	-			)C					100
		-		•			-		•	stands	are r	ecomm	end	ed to	be	retaine	1 as	
									-			-			_		Total	%
_					<u> </u>		1	2	3	4	5	6	7		8	9		
>50	Drasning Firewood	53 80	5 8	87	202								-	+				$\left  - \right $
30-49	Cham	31	3	۵	43													
				3														
20-25	Forest Composition and Description       Red confier forest with young thodo and mixed H/C stands, closed to open canopy and bod to average condition. Natural regeneration dominated by young Rhodo stands.     Stand data Bas. Area (m2/ha) Volume (m3/ha)       Number of treesha by diameter class (dbh-10cm)     Forest Type 10 Performance Performance     Stand of the Bas. Area (m2/ha)       Number of treesha by diameter class (dbh-10cm)       Forest Type 10 Performance       Performance       Stand data       Bas. Area (m2/ha)       Volume of treesha by diameter class (dbh-10cm)       Forest Type 10 Performance       Performance       Bas. Data       Colspan= 20       Bas. Data       Colspan= 20       Stand data       Colspan= 20       Bas. Data       Colspan= 20       Stand data       Colspan= 20       Number of treeshows 10 Performance       Bas. Data       Colspan= 20       Colspan= 20       Colspan= 20       Colspan= 20       Colspan= 20       Colspan= 20 <th cols<="" td=""><td></td><td><math>\left  - \right </math></td></th>			<td></td> <td><math>\left  - \right </math></td>		$\left  - \right $												
19 2	Poles, etc.			4									-	+				
		-	28	4	19													
		asures	A	(h-)	in O(										0		Total	%
			Area	(ha)	in %		1	2	3	4	5	6	7		8	9		
	0													+				
Fel	ling (Firewood	d)																
	• • • •																	
		rried ou				orii									Year	 r:		I
	sessment ca		n by		THEY DC	ոյ									redi			

						Com	partn	nent	Rec	cord									
Geog		Dang	chu		Block	Du	- ngdungne	eysa		Bloc	k No		1	С	Com	p. No		I	
								s in I	na								1		
Non p	productio	n			Prote		17.5					oductior	٦					69.	7
M <sup>2</sup>	1/0 - 1		1			st Con							_				data		
					ands. clo minated				n good	to av	erage	stand	-	Bas		<b>Stand</b> a (m2/h			27.8
oonanac	n. Nata	lailege	noradi	511 00	mateu	by raiou	o opelee	0.					ŀ			n3/ha)	a)		27.0
													_			onifer %	6	-	50%
	Number	of troos/ha	by diar	neter c	lass (dbh>	10cm)		Fo	rest Typ	e		and Type	•	%	NW	/FP+fire	w.	Α	S
180 -	Number C	1 11003/110	by ulai	neter c		roein)		He	mlock	ŧ		antation tural		100	Тур	e ewood		% 20	% 40
160									ruce			ppice		100	-	mboo		50	50
140 -									ed Conif	fer		nopy		%	Car				
120 -								-	e Pine ir Pine			nse osed		20 40	Dap	phne		20	40
100 -									rdwood		-	en		40					
80 -									ked H/C			stocked		0/		rest Use		1	E
60 -									e Class ung			ondition		% 30	Typ Gra	e izing		% 10	% 30
40 -								Imr	nature			erage		50	Sho	okshing			
						ļ			ture ermature	9	90 Po	or Site Char	actor	20	Lop	oping			
10-	er Broad		40<50 ■Rhod			70<80 a	30<90 90	+	ope			osivenes		%	Soi	il Cover		(	%
⊠ Ace ⊠ Fir	er		∎Oak ∎Spruc	è		Other Co Hemlock	nifers		ntle			able		70	Hig				50
	epine		Chirp					Ste	derate ep			oderate stable		30	Lov	derate v		:	50
Species			Heig	-					diame			T					al (>		
Chirpine			0.3<1	.3 m	<10	10<20	20<30	30<40	40<50	50<60	60<7	070<80	80<	90 9	90+	N/h	a		%
Bluepine																			
Hemlock	(			1592	566	11	16	19	14	10	7	2		2			81		24
Spruce Fir														_					
Other C	onifers																		
Oak																			
Acer Betula				106	177		4	6	:								10		3
Rhodode	endron			1096	601	79	12	17		1	1	1					115		33
	roadleav	es		212	248	68	29	15						1			138		40
Total				3006	1592 J <b>re Ma</b>	158	61	56				-		4			344		100
The ma	tured st	ands of	hemic	ock ar	nd mixed	H/C are	recomm	endec	l for fe	lling oi	n seled	ction ba	asis.						
	oductior										-	ed eacl				-	To	tal	%
Product		N total 1190	N/ha 17	%	(m3) 3502	2021	2022	2023	2024	2025	2026	2027	202	28 2	029	2030			
	wood	669	17	54	3502 1694							-							
♀ Char	m	2236	32	37	2053	-			[							[			
	wood	1772 284	25 4		1446 97								-	+			<u> </u>		
oc Tsim c Firev	wood	2270	33	7	602														
Pole	s, etc.	2365	34	2	161														
♀ Fire\ Silvicult		asures					Δr	ea in I	ha to b	e impl	ement	ed per	vear	-		L			
Measure			Area	(ha)	in %	2021	2022	-				2027			029	2030	To	tal	%
Planting			4-	4	00									$\top$					
Thinning Felling (I		d)	17 26		20 30							-		+					
Felling (		-/	34		40														
No activ			8.	7	10	<b>T</b> . I									×.				
ASSessi	ment ca	rried ou	tby		Tshering	robgy									Yea	r:	- 2	021	

						Com	partn	nent	Rec	cord								
Geog		Dang	chu		Block	1	ngdungne				k No		1	С	omp	. No		IV
					-		Area	is in h	na									
Non pr	roduction	า	0.0			ection	2.3					ductior	٦				43	.1
						st Con							-					
Mixed co					-		verage co	onditio	n with	open	canop	y.Natu		_	-	tand d		
regenera	ation do	minate	a by y	oung	rnoao sp	becles.							-			(m2/ha	)	21.7
														Volum	(	i3/ha) nifer %	_	149.8 46%
								For	est Typ	e g	6 Sta	nd Type		%		P+firew.	A	40 %
	Number of	f trees/ha	a by diar	neter c	lass (dbh>	10cm)			nlock			ntation		,,	Туре		%	%
300								Fir		6		tural		100	-	vood	83	17
250									uce ed Conif	er		ppice nopy		%	Bam		67	33
200 -									e Pine		_	nse		, <b>.</b>	Dapl	-		
200								-	r Pine			sed		100				
150 -									dwood ed H/C		Op Un:	en stocked		100	Fore	st Use	1	Е
100 -								Age	e Class	Q		ndition		%	Туре		%	%
			_					You	-	6	7 Go			17	Graz	-	17	33.33
50 -				_				Imn Mat	nature ture	3	3 Po	erage or		50 33	Shok	kshing bing	-	
0	20 20<30	30<40	40<50	50<	60 60<70	70<80	80<90 90	Ove	ermature	-		ite Char	acter					
■Othe	er Broadl	eaves	Rhod		ron 🛛	Betula		Slo	-			sivenes	s	%		Cover		%
⊠Aceı ⊠Fir	r		∎Oak ∎Spruc			Other Co Hemlock	niters	Ger	ntie derate			ble derate		83 17	High	erate	_	50 33
Blue	epine		Chirpi	ine				Ste				stable			Low			17
Species			Heig		- 110	40.00	-			ter cla		70 -00					(> 10	
Chirpine			0.3<1	.3 m	<10	10<20	20<30	30<40	40<50	50<60	60 0</td <td>/0&lt;80</td> <td>80&lt;</td> <td>90 9</td> <td>0+</td> <td>N/ha</td> <td></td> <td>%</td>	/0<80	80<	90 9	0+	N/ha		%
Bluepine																	-	
Hemlock					707			10	13	4	1	1				2	29	7
Spruce Fir				1238				3		1		2	,	2			9	2
Other Co	nifers			1230				3		1		2					9	2
Oak																		
Acer							27	10									27	6
Betula Rhodode	ndron			177	59	57	54	10 3	2					_		11	2	3 27
Other Bro		es			118	189	14	28	4	1						23		55
Total				1415	884	245	95	55	19		1	-		2		42	27	100
				Fut	ure Ma	inager	nent &	Мо	nitori	ing o	f Ac	tivitie	es					
		<b>D</b> ( )																
Product s	duction	N total		voiui %	<b>me)</b> (m3)	2021	2022			to be r 2025					129	2030	Total	%
<b>D</b> 1		222	5	33	716		2022	_0_0		2020			202	~ 20				
<sup>4</sup> Firew	vood	25	1	33	151													
ବ Charr ଚ Firew		479	11 22	46	472 726								-	+	-+			
		927 293	7		94	<u> </u>							-	+	-+			
<sup>67</sup> <sup>70</sup> <sup>70</sup> <sup>70</sup> <sup>70</sup> <sup>70</sup>	vood	878	20	12	207													
Poles	s, etc.	0050	75	9	001								1					
- IFICAW		3250 sures	75		231		Δr	ea in F	a to b	e imple	emente	ed per	vear					
					1.0/	2021	2022	-				2027			)29	2030	Total	%
Silvicultu Measure			Area	(ha)	in %	2021				LOLO								
<b>Silvicultu</b> Measure Planting			Area	(ha)	IN %	2021				2020								
Silvicultu Measure Planting Thinning		)								2020								
<b>Silvicultu</b> Measure Planting	irewood	)	Area 15	.1	33 50													
Silvicultu Measure Planting Thinning Felling (F	irewood imber)		15 22 7.0	.1 .7	33										fear:		2021	

0						Com	partm	nent	Rec	ord									
Geo	og	Dang	chu		Block	Du	- ngdungne	eysa		Bloc	k No	-	1	С	omp	o. No		\	V
								s in h	a										
No	n productio	on			Prote		6.8					ductior	1					98.9	9
. 4.							npositi				-								
	d H/C stan neration o						lopy and	gooa	to ave	rage o	onalti	on,natu		Pag	-	tand o			28.9
reger	eration o	THOTHOU	and and	TTIOC	io specie								-			(m2/ha n3/ha)	a)		20.8
													- F		`	nifer %	5		45%
	Number	of trace/ba	by dias	notor o	laga (dhha	10 cm)		For	est Type	e S	6 Sta	nd Type		%	NW	FP+firew	1.	Α	S
180 <del>-</del>	Number	01 11 22 5/112	by ulai	neter c	lass (dbh>	iociii)			nlock			ntation		100	Туре			%	%
160 -								Fir Spr	uce			tural ppice		100	-	wood 1boo		57 57	43
140 -									ed Conife	er	_	nopy		%	Can				
120 -									e Pine r Pine			nse sed		7 86	Dap	hne		14	36
100 -								-	dwood		7 Op			7					
80 -								Mix	ed H/C		_	stocked			For	est Use		T	Е
60 -								Age You	e Class		6 Co 4 Go	ndition		% 14	Type Graz			%	% 85.71
40 -									nature			erage		79		kshing			55.11
20 -						0101010101010		Mat		7	'9 Po			7	Lop	ping		$\square$	
0 10	10<20 20<		40<50 ■Rhod				30<90 90	Ove Slo	rmature pe			ite Chara	<u> </u>	istics %	Soil	Cover		c	%
Ø/	Acer		Oak		Ē	Betula Other Co	nifers	Ger				ble		79	High				7 <b>0</b> 71
⊡F ■E	Fir Bluepine		■Spruc ■Chirp		B.	Hemlock		Moo	derate			derate stable	_	21	Mod	lerate	_	2	29
			Heig	aht			N/I		ep diame			stable			LOW	Tota	I (>	10c	m)
Speci	ies		0.3<1		<10	10<20	20<30	30<40	40<50	50<60	60<70	70<80	80<	90 9	0+	N/ha			%
Chirpi																			
Bluepi Hemlc				909	1945				13	9	5	4		3			35		11
Spruc	e						3										3		1
Fir	Conifers			54	25	8	3			1	0	1					13		4
Oak	Conners			51 51	101				4	1							1		1
Acer						16		15	3	1							34		10
Betula				<u> </u>	070	49	12	45	1	4	3						1 88		0 27
	odendron Broadleav	/es		606 253	278 328	49 97	20	15 13	4	4	3			0			00 51		46
Total				1869	2678	170	38	43	32	24	12			3			29		100
				Futu	ure Ma	nagen	nent &	Мо	nitori	ing o	f Ac	tivitie	es						
	natured s																		
	Productio			· · · · · ·		2024						ed each				2020	Tot	al	%
Produ	uct size	N total	N/ha	%	(m3)	2021	<b>Vol</b> t 2022					ed eact 2027			029	2030	Tot	al	%
Produ <sub>05</sub> Dr Fii				· · · · · ·		2021									029	2030	Tot	al	%
Produ <sub>95</sub> Dr Fii	uct size rashing rewood ham	N total 1984 447 796	N/ha 20 5 8	%	(m3) 6166 1170 765	2021									029	2030	Tot	al	%
Produ Dr 2040 Fii 3049 Ct Fii	ict size rashing rewood ham rewood	N total 1984 447 796 2742	N/ha 20 5 8 28	% 64 30	(m3) 6166 1170 765 2677	2021									029	2030	Tot	al	%
Produ Dr 2040 Fii 3049 Ct Fii	uct size rashing rewood ham	N total 1984 447 796	N/ha 20 5 8	% 64	(m3) 6166 1170 765	2021									029	2030	Tot	:al	%
0         50-29         30-46         >20           0         50         70         70           0         50         70         70           0         50         70         70           0         50         70         70           0         70         70         70           0         70         70         70           0         70         70         70           0         70         70         70           0         70         70         70           0         70         70         70	ict size rashing rewood ham rewood sim rewood rewood	N total 1984 447 796 2742 575 3996	N/ha 20 5 8 28 6 40	% 64 30	(m3) 6166 1170 765 2677 158 284	2021									029	2030	Tot	al	%
Produ         Solution         Solution <thsolution< th="">         Solution         <th< td=""><td>ict size rashing rewood ham rewood sim rewood oles, etc. rewood</td><td>N total 1984 447 796 2742 575 3996 2398</td><td>N/ha 20 5 8 28 6</td><td>% 64 30 1</td><td>(m3) 6166 1170 765 2677 158</td><td>2021</td><td>2022</td><td>2023</td><td>2024</td><td>2025</td><td>2026</td><td>2027</td><td>202</td><td>28 20</td><td>029</td><td>2030</td><td>To</td><td></td><td>%</td></th<></thsolution<>	ict size rashing rewood ham rewood sim rewood oles, etc. rewood	N total 1984 447 796 2742 575 3996 2398	N/ha 20 5 8 28 6	% 64 30 1	(m3) 6166 1170 765 2677 158	2021	2022	2023	2024	2025	2026	2027	202	28 20	029	2030	To		%
Produ         Solution         Solution <thsolution< th="">         Solution         <th< td=""><td>ict size rashing rewood ham rewood sim rewood oles, etc. rewood cultural Me</td><td>N total 1984 447 796 2742 575 3996 2398</td><td>N/ha 20 5 8 28 6 40</td><td>% 64 30 1 4</td><td>(m3) 6166 1170 765 2677 158 284</td><td>2021</td><td>2022</td><td>2023 ea in h</td><td>2024</td><td>2025</td><td>2026</td><td></td><td>year</td><td>28 20</td><td>029</td><td></td><td>Tot</td><td></td><td>%</td></th<></thsolution<>	ict size rashing rewood ham rewood sim rewood oles, etc. rewood cultural Me	N total 1984 447 796 2742 575 3996 2398	N/ha 20 5 8 28 6 40	% 64 30 1 4	(m3) 6166 1170 765 2677 158 284	2021	2022	2023 ea in h	2024	2025	2026		year	28 20	029		Tot		%
Produ Dr Fil 67 67 67 67 67 67 67 67 67 67 67 67 67	ict size rashing rewood ham rewood sim rewood oles, etc. rewood sultural Me ure ng	N total 1984 447 796 2742 575 3996 2398	N/ha 20 5 8 28 6 40 24	% 64 30 1 4	(m3) 6166 1170 765 2677 158 284 160		2022	2023 ea in h	2024	2025	2026	2027	year	28 20					
Produ Dr Fil 67 05 20 20 40 20 40 10-10 20-20 30 40 Fil Fil Fil Fil Fil Fil Fil Fil Fil Fil	Int size rashing rewood ham rewood sim rewood oles, etc. rewood cultural Me ure ng	N total 1984 447 796 2742 575 3996 2398 2398	N/ha 20 5 8 28 6 40 24 Area	% 64 30 1 4 (ha)	(m3) 6166 1170 765 2677 158 284 160 in %		2022	2023 ea in h	2024	2025	2026	2027	year	28 20					
Produ Dr 102 02 07 02 02 02 02 02 02 02 02 02 02 02 02 02	ict size rashing rewood ham rewood sim rewood oles, etc. rewood cultural Me ure ng ing g (Firewoo	N total 1984 447 796 2742 575 3996 2398 2398	N/ha 20 5 8 28 6 40 24 Area 45	% 64 30 1 4 (ha)	(m3) 6166 1170 765 2677 158 284 160 in %		2022	2023 ea in h	2024	2025	2026	2027	year	28 20					
Produ Dr 102 02 07 02 02 02 02 02 02 02 02 02 02 02 02 02	Int size rashing rewood ham rewood sim rewood oles, etc. rewood sultural Me ure ng ing g (Firewoo g (Timber)	N total 1984 447 796 2742 575 3996 2398 2398	N/ha 20 5 8 28 6 40 24 Area	% 64 30 1 4 (ha) .3 .3	(m3) 6166 1170 765 2677 158 284 160 in %		2022	2023 ea in h	2024	2025	2026	2027	year	28 20					

					Com	partn	nent	Rec	ord								
Geog	Dang	chu		Block	Du	- ndungne	/sa		Bloc	k No		1	С	com	p. No		VI
						Area	s in ł	าล									
Non produc	ction		_		ection	1.5					duction	<u>ו</u>				67	.0
						npositi					n						
Hemlock for					•			od to a	verage	9			_	-	Stand d		
condition.Na	itural reger	neratio	n of I	Hemlock	and Rho	do speci	es.					-			(m2/ha	)	67.1
															n3/ha)		529.2
[							For	rest Type		% Sta	nd Type	-	Volum %	-	onifer % FP+firew	. A	36%
	er of trees/ha	a by dian	neter c	lass (dbh>	10cm)			mlock			ntation		/0	Тур		· <b>^</b>	%
400							Fir		4		tural		100	-	wood	57	43
350							·	ruce ed Conife	or		ppice nopy	_	%	Ban	nboo	43	14
300 -								e Pine	ei		nse		70		hne		14
250 -							Chi	r Pine		Clo	sed		57				
200 -								dwood		Op			43				-
150 -								ed H/C e Class			stocked ndition	_	%	Typ	est Use	  %	E %
100		m					You			29 Go			29		zing	70	85.71
50 -								nature	7		erage		71	Sho	kshing		
			// <del>******</del>		1838383838381 arm			ture ermature		Po	or ite Char	o o to ri	otioo	Lop	ping		
	20<30 30<40	40<50 ■Rhodo	50<0		70<80 Betula	80<90 90	Slo				sivenes		%	Soi	l Cover		%
⊠Acer		Oak			Other Co	nifers	Gei				ble		86	Hig			57
I ■ Fir I ■ Bluepine		Spruc Chirpi		III	Hemlock			derate			derate		14	-	derate		29
		Heig	tht			N/I		diame		-	stable			Low		(> 10	14 cm)
Species		0.3<1	-	<10	10<20			40<50			70<80	80<	90 9	0+	N/ha	<u> </u>	%
Chirpine																	
Bluepine			2173	505				9	7	13	12		_			19	0
Hemlock Spruce			2173	505				9	1	13	12		8			+9	6
Fir			202	101			3			1						4	0
Other Conifer	S										1		2			2	0
Oak Acer						17	6									23	3
Betula			152	455	97	52	21	22	12	11	3				2		28
Rhododendro	n		1162	2678	194	76	39	20	11	6						45	44
Other Broadle	eaves		202	354	49	47	27	14								48	19
Total			3890	4093 ure Ma	340	192	95		42	31	-		10		78	39	100
The mature s	stand of bo	oth mix	ed H	IC and H	emlock a	ire recon	nmend	led to I	oe allo	ted as	firewo	od a	and ti	mbe	ðr.		
	tion Potent	<u> </u>						trees								Total	%
Product size	N total		%	(m3)	2021	2022	2023	2024	2025	2026	2027	202	28 20	029	2030	13(0)	70
ریم Drashing Firewood	2815 1730	42 26	63	9030 4978									+				+
ProvideProvi	2283	34	23	2691							L						
	3310	49	23	2342													
ର୍ଦ୍ଧ Tsim ରି Firewood	1950	29	10	661													
o Polos oto	5851 . 3251	87 49		1537 299											$\vdash$		
Firewood	8668	129	4	615								1					
								na to b		•						Total	%
Silvicultural I		Area	(ha)	in %	2021	2022	2023	2024	2025	2026	2027	202	28 20	029	2030	Total	70
Measure																	
Measure Planting																	
Measure Planting Thinning	ood)	19.	.6	29													
Measure Planting				29 71													
Measure Planting Thinning Felling (Firewa	er)	19. 48.												Year		202	

						Com	partn	nent	Rec	ord								
Geog		Dang	chu		Block		- Eusagan	g		Bloc	k No		2		Com	p. No		I
							Area	s in l	าล									
Non p	oroduction	n	10.8		Prote	ection	28.1				Pro	ductior	ı				97	.7
					Fore	st Con	npositi	ion a	nd D	escr	iptio	n						
Mixed H	HC with h	nardwo	od sta	nds.	closed to	open ca	anopy wit	h goo	d to av	rage	stand				S	Stand of	data	
conditic	on. Natur	al rege	neratio	on of	mixed H	C stand.		•		•				Bas.	. Area	(m2/ha	a)	18.5
													Ī	Volu	ime (n	n3/ha)		127.2
														Volu	ime co	onifer %	b	6%
	Number of	f trees/ha	a by diar	neter o	lass (dbh>	10cm)			rest Typ	e (		nd Type	•	%	_	FP+firev		S
140 —			,		(	,		Hei	nlock			ntation :ural		100	Typ	e wood	20	% 27
120 -									uce			ppice		100		nboo		13
								Mix	ed Conif	er		nopy		%	Car	ne		
100 -									e Pine			nse		=0		ohne	47	20
80 -		_							r Pine dwood		33 Op	sed en		73 27				
60									ed H/C			stocked			_	est Use	I	Е
40			H					Ag	e Class		% Co	ndition		%	Тур	е	%	%
40 -								You	-		20 Go			20		zing	87	13.33
20			<i>"</i>	-					nature ture		13 Ave 67 Po	erage		60 20		okshing ping		
0									ermature	Ť		ite Char	acter			ping		
∎Oth	er Broadl					Betula	80<90 90	Slo	pe		% Ero	sivenes	s	%	Soi	l Cover		%
⊠ Ace ⊡ Fir			∎Oak ∎Spruc	e		Other Co Hemlock	nifers	Ge	ntle derate		33 Sta 10 Mo			60	- Ŭ			67
	iepine		Chirp					Ste				derate stable		27 13		derate v		67 33
Species			Heig	ght			<b>N</b> /		diame	ter cla			1				al (> 10	cm)
•			0.3<1	.3 m	<10	10<20	20<30	30<40	40<50	50<60	60<70	70<80	80<	:90	90+	N/ha	3	%
Chirpine																		
Bluepine Hemlock				354	94			3			1			0			4	2
Spruce	-							-			-			-			-	
Fir																		
Other C	onifers							10	2	1		2		_			45	
Oak Acer					24		14	10	-		0	2		0			15 22	5 8
Betula									3								3	1
Rhodod	endron			189	71	68	54	28	-			1		0		1	64	59
	roadleave	es		2664	589	53	5	10				1					72	26
Total				3207	778	121	73	54	-	5	-	-		1		2	280	100
	odo star				ure Ma													
of the r	emainng	stands	5.															
Product	oduction	Potent N total		Volu %	<b>me)</b> (m3)	2021	2022		trees						2029	2030	Total	%
		117	N/na		391	2021	2022	2023	2024	2023	2020	2021	204	20	2029	2030		
<sup>*</sup> Fire	wood	673	7	52	1784													
୍ସ Chai ଛ Firev		434	4	43	426									T				
	wood	1738	18		1368									-+				
70-20 50-20 50-20	n wood	796	8	5	188									+				
	es, etc.																	
₽ Fire	wood			1														
	tural Mea	sures		(1.)		0001			na to b						0000	00000	Total	%
Measure Planting			Area	(ha)	in %	2021	2022	2023	2024	2025	2026	2027	202	28 :	2029	2030		
Planting Thinning									-		-							
	Firewood	)	72	.9	53													
Felling (	Timber)		18		13													
No activ	ity		45	.5	33													

Year:

2021

33 Karpola

No activity 45 Assessment carried out by

					Com	partm	nent	Rec	ord								
Geog	Danç	gchu		Block		Eusagan				k No		2	Сог	np. No			
							s in ł	na									
Non produ	ction	0.1		Prote		6.9		<u> </u>			ductior	1			6	65.9	
						npositi						_					
Young Rhod	lo stands	with B/I	_ fore	st. Close	ed to ope	en canop	y with	averag	ge star	nd con	dition.			Stand			
												_		ea (m2/h	a)		34.0
														(m3/ha)		20	02.1
							Eo	est Typ		% Sta	nd Type		1	conifer % WFP+firev		4	5% s
	er of trees/h	a by diar	neter c	lass (dbh>	10cm)			nlock			ntation			ype		%	%
500							Fir			Nat	ural			irewood	2	9	43
450								uce			opice	_		amboo		_	57
350 -								ed Conif e Pine	ər	Der	nopy nse			ane aphne	8	6	14
300								r Pine		Clo			86				
250 -								dwood		Ope			_		_	_	
200 -								ed H/C e Class			tocked	_		orest Use ype		I %	<b>E</b> %
							You			God				razing		_	4.29
100 -							Imn	nature		Ave	erage		71 S	hokshing			
			8				Mat		1	00 Poo				opping		_	
10<20	20<30 30<4					30<90 90 -	Slo	ermature ne			ite Char sivenes			oil Cover		%	
⊠Acer	oadleaves	Oak		C	Betula Other Co	nifers	Ger	•		57 Sta				igh		14	_
I Fir I Bluepine	1	Spruce Chirp			Hemlock			derate			derate			loderate		86	6
		Heig				N//	Ste	ep diame			stable		L	ow Tota	al (> ′	0cn	n)
Species		0.3<1	-	<10	10<20					55 60<70	70<80	80<9	0 90+		<u>`</u>	%	
Chirpine																	
Bluepine																	
Hemlock									1		1		1	-	2		0
Spruce Fir																	
Other Conifer	rs						3								3		0
Oak																	
Acer							2	4					_		4		0
Betula Rhododendro	n		1566	2072	307	134	33	22	2	2	1		-		7 497		1 67
Other Broadle			1000	2012	129	52	36	7	6	1	1		1	_	233		31
Total			1566	2072	437	186	74	32	11	3	2		1	7	746		100
			Fut	Iro Mo	nogon	1 0											
		nde car								of Act			eratio	n of val	uahlo	tim	hor
species.			n be r	emoved		ted as fir	ewoo	d in ord	der to	enhano	ce the	reger		n of valı	uable	tim	ber
species.	tion Poter	itial (N,	h be r	emoved me)	and allot	ted as fir Volu	ewood	d in ord	to be i	enhano	et he	reger n yea	r		uable		ber %
Product size	tion Poter	<b>tial (N,</b> N/ha	Volui	emoved ne) (m3)		ted as fir	ewood	d in ord	to be i	enhano	et he	reger	r	n of val			
species.	tion Poter N total 221	itial (N,	h be r	emoved me)	and allot	ted as fir Volu	ewood	d in ord	to be i	enhano	et he	reger n yea	r				
Product size Broduct size Broking Firewood	tion Poter N total 221 472 432	tial (N, N/ha 3 7 7	Volui % 31	emoved (m3) 730 1189 414	and allot	ted as fir Volu	ewood	d in ord	to be i	enhano	et he	reger n yea	r				
Product size 0 0 0 0 0 0 0 0 0 0 0 0 0	tion Poter N total 221 472 432	tial (N, N/ha 3 7	Volui	emoved me) (m3) 730 1189	and allot	ted as fir Volu	ewood	d in ord	to be i	enhano	et he	reger n yea	r				
Product size Product size Orashing Firewood Cham Firewood	tion Poter N total 221 472 432 2707	tial (N, N/ha 3 7 7 41	Volui % 31	me) (m3) 730 1189 414 2140	and allot	ted as fir Volu	ewood	d in ord	to be i	enhano	et he	reger n yea	r				
species. Product size 02 Drashing 03 Cham 04 Firewood 04 Firewood 05 Firewood 07 Tsim 15 Firewood	tion Poter N total 221 472 432 2707 4600	tial (N, N/ha 3 7 7 41 41 70	Volui % 31 41 18	me) (m3) 730 1189 414 2140 1099	and allot	ted as fir Volu	ewood	d in ord	to be i	enhano	et he	reger n yea	r				
Product size Product size Present size Cham Firewood Firewood	tion Poter N total 221 472 432 2707 4600 c. 2130	tial (N, N/ha 3 7 7 41	<b>Volu</b> % 31 41	me) (m3) 730 1189 414 2140	and allot	ted as fir Volu	ewood	d in ord	to be i	enhano	et he	reger n yea	r				
species. Product size Orashing Drashing Firewood 64 Cham 64 Cham 65 Firewood 67 Oz Firewood 64 Cham 67 Oz Firewood 64 Cham 65 Firewood 65 Firewood 66 Firewood 67 Firewood 67 Firewood 67 Firewood 68 Firewood 69 Firewood 60 Firewood 60 Firewood 60 Firewood 60 Firewood 60 Firewood 60 Firewood 60 Firewood 60 Firewood 61 Firewood	tion Poter N total 221 472 432 2707 4600 2. 2130 6389	tial (N, N/ha 3 7 7 41 70 32 97	Volur % 31 18 10	me) (m3) 730 1189 414 2140 1099 152 445	2021	Volu 2022	ewood ime of 2023 ea in h	trees 2024	to be 1 2025	remove 2026	ed eacl 2027	n year	r 3 202:	9 2030	- Tota		%
species. Product size Product size Prashing Prashing Cham Cham Cham Firewood Rirewood Rirewood Poles, etc Firewood Silvicultural Measure	tion Poter N total 221 472 432 2707 4600 2. 2130 6389	tial (N, N/ha 3 7 41 70 32	Volur % 31 18 10	me) (m3) 730 1189 414 2140 1099 152	and allot	Volu 2022	ewood ime of 2023 ea in h	trees 2024	to be 1 2025	remove 2026	ed eacl 2027	1 yea 2020	r 3 202:	9 2030			
species. Product size Product size Drashing Priewood Priewood Cham Cham Cham Firewood Firewood Poles, etc Firewood Silvicultural Measure Planting	tion Poter N total 221 472 432 2707 4600 2. 2130 6389	tial (N, N/ha 3 7 7 41 70 32 97	Volur % 31 18 10	me) (m3) 730 1189 414 2140 1099 152 445	2021	Volu 2022	ewood ime of 2023 ea in h	trees 2024	to be 1 2025	remove 2026	ed eacl 2027	n year	r 3 202:	9 2030	- Tota		%
species. Product size Product size Product size Prewood Cham Firewood Cham Firewood Poles, etc Firewood Silvicultural Measure Planting Thinning	tion Poter N total 221 472 432 2707 4600 c. 2130 6389 Measures	tial (N, N/ha 3 7 7 41 70 32 97	Volui % 31 18 10 ((ha)	me) (m3) 730 1189 414 2140 1099 152 445	2021	Volu 2022	ewood ime of 2023 ea in h	trees 2024	to be 1 2025	remove 2026	ed eacl 2027	n year	r 3 202:	9 2030	- Tota		%
species. Product size Product size Product size Prewood Cham Firewood Cham Firewood Poles, etc Firewood Silvicultural Measure Planting Thinning	tion Poter N total 221 472 432 2707 4600 3. 2130 6389 Measures	tial (N, N/ha 3 7 41 70 32 97 41 8 70 32 97	Volui % 31 41 18 10 ((ha) .6	emoved (m3) 730 1189 414 2140 1099 152 445 152 445	2021	Volu 2022	ewood ime of 2023 ea in h	trees 2024	to be 1 2025	remove 2026	ed eacl 2027	n year	r 3 202:	9 2030	- Tota		%
species. Product size Product size Drashing Firewood Cham Cham Firewood Cham Poles, etc Firewood Silvicultural Measure Planting Thinning Felling (Firew	tion Poter N total 221 472 432 2707 4600 2. 2130 6389 Measures rood) er)	tial (N, N/ha 3 7 7 41 70 32 97 41 41 41 41 20 10	Volut % 31 41 18 10 (ha) .6 .8	me) (m3) 730 1189 414 2140 1099 152 445 152 445 57	2021	Volu 2022	ewood ime of 2023 ea in h	trees 2024	to be 1 2025	remove 2026	ed eacl 2027	n year	r } 202* ↓ ↓ ↓ 202* ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	9 2030	- Tota		%

					Com	partn	nent	Rec	ord									
Geog	Dang	chu		Block		ashiding				k No		3	Сс	omp. No		I		
							s in ł	na										
Non productio	n			Prote		13.5		<u> </u>			ductior	า			26	6.3		
						npositi												
Mixed conifer for						•			good	to ave	erage			Stand				
stand condition	. Natura	al rege	nerat	ion of he	mlock ar	id Rhodo	spec	es.				-		rea (m2/h	na)	27.6		
														e (m3/ha)		208.3		
							East			0/ 64	nd Tune			e conifer 9		38%		
Number o	of trees/ha	ı by diar	neter c	lass (dbh>	10cm)			rest Type mlock			nd Type ntation	•		Туре	w. A			
							Fir		2	25 Na	tural			Firewood	6	31		
160 -							·	uce			ppice		0/	Bamboo	6	13		
140 -								ed Conif e Pine	er		nopy nse		% 6	Cane Daphne	31	13		
120 -								r Pine			sed		81					
100 -	_							dwood		Ор			13					
80								ed H/C Class			stocked ndition		%	Forest Use	• I %	E %		
60 -							You			6 Go			70 44	Type Grazing	13	_		
40 -							lmn	nature		6 Ave	erage		56	Shokshing				
20						_	Mat		8	38 Po				Lopping				
10<20 20<3		40<50	50<0			30<90 90	+ Slo	ermature			ite Char osivenes	<u> </u>		Soil Cover		%		
⊠Acer		■Rhod ∎Oak		C	Betula Other Co	nifers	Ger	•		50 Sta			94	High		31		
⊠Fir ■Bluepine		Spruc Chirpi			Hemlock			derate			derate			Moderate		50		
		Heig				N/I	Ste	ep diame			stable		6	Low	al (> 10	19 )cm)		
Species		0.3<1		<10	10<20						70<80	80<9	90 90		<u> </u>	%		
Chirpine																		
Bluepine													_		_			
Hemlock Spruce			199	309				2	1	0	1		1		5	1		
Fir			752	177			5	2	2	4	2	2	0		16	4		
Other Conifers			44	66		3	4		3			-	2		16	4		
Oak						3		7	5	3			0		18	5		
Acer Betula						13	1 12	2	4	1			_	_	16 22	4		
Rhododendron			1260	508	163	66	21	4					_		257	70		
Other Broadleav	es			22	7		6		2		1				17	5		
Total			2255	1083	170	84	49	-	-	-	-		3		366	100		
			Fut	ure Ma	nagen	nent &	Мо	nitori	ing c	of Ac	tivitie	es						
Felling of the m can be alloted a	as firew	ood, i	f the	area can		ssed by	road ir	n the n	ext ter	) years	i.							
Production Product size					2021					-				20 2020	Total	%		
	N total 3465	N/ha 13	%	(m3) 10993	2021	2022	2023	2024	2025	2020	2027	202	.0 20.	29 2030				
۲ Firewood	1532	6	52	3876														
ବ tham େ Firewood	3686	14	34	4277									$\square$					
	6936 678	26		5553 160								-						
°⊼ <sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>1</sup>	678 10170	3 38	9	160 2396								-	+	-	+	-		
Poles, etc.			5															
	20717	78	3	1379														
Silvicultural Me	asures	Arec	(bc)	in 9/	2024					-	ed per		0 00	20 2020	Total	%		
Measure Planting		Area	(na)	in %	2021	2022	2023	2024	2025	2020	2027	202	0 20.	29 2030				
Thinning											L							
Felling (Firewood	d)	122		44	_													
Felling (Timber)		122		44							<u> </u>		_		<u> </u>			
No activity Assessment ca	rried ou	35. it hv	.0	13 Tshewan	a Namaa						1		v	'ear:	202	1		
Assessment Ca	neu ou	г Бу		ronewall	y maniya	y							ſ		202			
						Com	partn	nent	Rec	ord								
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Geog		Dang	chu		Block		• ashidingl				k No		3	С	omp	o. No		11
							Area	s in I	ha									
Non pr	oductior	ı				ection	1.4					oductior	า				97	7.5
						st Con												
Fir forest	-	-				d to dens	e canop	y, goo	od to av	/erage	stan	b			-	tand c		
conditior	h with pr	rotuse	⊢ır reg	enera	ation.								-			(m2/ha	)	22.5
														Volum		,		167.3
								Eo	rest Type		∕₀ St	and Type		Volum %		nifer % FP+firew	_	63%
	lumber of	trees/ha	by diar	neter c	lass (dbh>	10cm)			mlock			and Type antation	•	70	Туре		. A %	-
350								Fir		ç	1 Na	atural		100	Fire	wood	18	18
300 -									ruce ked Conifi			oppice	_	0/		nboo		
250 -									e Pine	er		anopy ense		% 9	Can Dap			
200 -									ir Pine			osed		82				
									rdwood			ben		9	_		-	-
150 -									e Class	0	_	nstocked	_	%	Fore Type	est Use	   %	E %
100 -									ung			bod		73	Graz		36	
50 -								Imr	mature		9 A1	/erage		27	Sho	kshing		
0									iture	8		oor			Lop	ping		
10<2	0 20<30 er Broadle		40<50	50<6		70<80 a Betula	30<90 90	+	ermature	a	_	Site Char osivenes		istics %	Soil	Cover		%
Acer			Oak			Other Co	nifers		ntle			able		100	High			36
⊠Fir ■Blue	pine		Spruc Chirpi			Hemlock			derate	1		oderate			-	lerate		55
	I		Heig				N/	Ste	eep <b>diame</b>	ter cla	φ.	nstable		_	Low		I (> 10	9 )cm)
Species			0.3<1		<10	10<20	20<30			-		0 70<80	80<	90 9	0+	N/ha		%
Chirpine																		
Bluepine																		
Hemlock Spruce												1 0					1	0
Fir				4212	1157	41	7	g	8	6		9 4	-	2			87	18
Other Co	nifers											-						
Dak																		
Acer Betula						165	19 22	6									19 93	4
Rhododer	ndron			1608	1415	103	67	6									86	39
Other Bro		s					4	2								•	6	1
Total				5820	2572	319	119	23	-			9 5		2		4	90	100
				Futi	ure Ma	nagen	nent &	Мо	nitori	ing o	f Ac	tiviti	es					
						to be allo											Jour	
	duction					2024						ed eac			200	2020	Total	%
Product s		N total 898	N/ha 9	%	(m3) 3420	2021	2022	2023	2024	2025	2026	6 2027	202	28 20	JZ9	2030		
<sup>2</sup> Drash		31	0	50	187				1				+	+				-
ଙ୍କ Cham	1	1183	12	21	1303													
	ood	368	4	~'	226								<u> </u>					+
02 02 Firew	hoo	722 3250	7 33	16	231 892								-					
n Poles		2006	21	40	185								-					+
Firew	,	9027	93	13	780													
Silvicultu	iral Mea	sures		()		0.000						ed per				0000	Total	%
			Area	(ha)	in %	2021	2022	2023	2024	2025	2026	5 2027	202	28 20	029	2030		
Measure									1	1			1	1				
Measure Planting																1		
Measure Planting Thinning Felling (Fi	irewood	)	27	.0	27													
Veasure Planting Thinning Felling (Fi Felling (Ti	imber)	)	62	.9	64													
Measure Planting Thinning Felling (Fi	imber) y		62 9.	.9	64 9	g Namgyo									Year		202	

					Com	partm	nent	Rec	cord								
Geog	Dang	Ichu		Block	Та	• ashidingk	ha		Bloc	k No		3	C	Com	p. No		
						Area	s in h	na									
Non produc	tion			Prote	ection	23.0				Pro	oductior	۱				255	5.2
				Fore	st Con	npositi	on a	nd D	escr	iptio	n						
Mixed conife						•		-	good t	o ave	rage			S	Stand d	ata	
condition. Na	atural rege	eneratio	on of	Rhodo s	pecies a	nd mixed	conif	er.				I	Bas.	Area	(m2/ha	)	27.4
												`	Volur	ne (n	n3/ha)		198.1
										_					onifer %		27%
Numbe	er of trees/ha	a by diai	meter c	lass (dbh>	10cm)			rest Typ			and Type	•	%	_	FP+firew.		S
350 1							Fir	nlock			intation tural		100	Typ	e wood	% 52	% 30
300 -								uce			ppice			_	nboo	37	15
								ed Conif	er 4		nopy		%	Car			
250 -								e Pine			nse		0.5	Dap	ohne	30	15
200 -								r Pine dwood		Op	en en		85 15	_		_	
150 -								ed H/C	4		stocked			For	est Use	1	E
m							Ag	e Class			ndition		%	Тур		%	%
100 -							You	-		1 Go		-+	48	-	zing	3.7	74.07
50 -								nature ture		2 Av 7 Po	erage or	-+	52		okshing oping	+	
0		<i></i>				<b></b> .		ermature		_	or Site Char	acteri	istics		'hin ið	+	
10<20 2 Other Bro	adleaves	<sup>40&lt;50</sup> ■Rhod			70<80 Betula	30<90 90 -	Slo	pe	Q	% Ere	osivenes	s	%	Soi	l Cover		%
⊠ Acer ⊠ Fir		∎Oak ■Sprud	20		Other Co Hemlock	nifers	Ge				ible		70	Hig			33
Bluepine		Chirp			TIETHOCK		Mo Ste	derate			derate stable		30	Low	derate	_	48 19
		Hei	ght			N/ł		diame		-	Stable					(> 10	
Species		0.3<1	.3 m	<10	10<20	20<30	30<40	40<50	50<60	60<70	70<80	80<	90 9	90+	N/ha	Ì	%
Chirpine																_	
Bluepine Hemlock								1	0	1	1		1			4	1
Spruce													·			+	
Fir			144	249	21	5	3	3	2	1	1		2		3	37	7
Other Conifers	S				8	5	2		0	C						16	3
Dak Naar			13	13 13	4	3 15	2		3	1	1		1			17 11	3
Acer Betula			26	13	13	15	0 4		4		1		0			+ 1 31	6
Rhododendror	า		3589	982	184	83	15	-	1		0					36	55
Other Broadle	aves		105	26	63	12	10		1				0		8	38	17
Fotal			3877	1284	302	130	44		14	3			4		51	9	100
				ure Ma													
The mixed co be allotted as			I H/C	stand are	e recomr	nenaea t	orteili	ing as '	timber	on se	lection	bas	is ar	אמ או	nodo st	ands	can
	ion Poten									-	ed eacl					Total	%
Product size	N total	N/ha 7	%	(m3) 6894	2021	2022	2023	2024	2025	2026	2027	202	28 2	2029	2030		
Drashing Firewood	1864	8	59	6784								-	+				
	1737	7	22	1858									$\top$				
Prevention of the second secon	4333	17	23	3528													
R Tsim Firewood	770	3	11	182									$\square$				
	9629	38		2371									+				
Poles, etc	. 22468	88	7	1506									+			-	
Silvicultural N			1			Ar	ea in ł	na to b	e imple	emente	ed per	year	•			Tatat	0/
<i>l</i> easure		Area	(ha)	in %	2021	2022	2023	2024	2025	2026	2027	202	28 2	029	2030	Total	%
Planting																	
Thinnina		1						1	1	1	1	1	1		i 1		1

 Training
 Thining
 <

Geog         Dangchu         Block         Tashidingdra         Block No         3         Comp. No         IV           Non production         1.6         Protection         5.5         Production         71.8           Non production         1.6         Protection         5.5         Production         71.8           Wheel HC stand with young rhoods and scattered patches of Fir stands. Good to average condition with closed canopy.         Stand data         Bas. Area (m2/ha)         30.           Volume (nSina)         1.6         Production         Produc							Com	partn	nent	Rec	ord									
Non production         1.6         Protection         6.5         Production         71.8           Forest Composition and Description           Mixed HC stand with young rhoods and scattered patches of Fir stands. Good to average condition with closed campy.         Stand data         Bas. Area (m2/hz)         30.           Number of trees/ha by diameter class (dbh=10cm)         Forest Type         %         Based Type         %         Multi-reference         %         30.           Number of trees/ha by diameter class (dbh=10cm)         Forest Type         %         Based Type         %         Multi-reference         %         30.           Number of trees/ha by diameter class (dbh=10cm)         Forest Type         %         Based Type         %         Multi-reference         %         %         %           Stand data         Based Type         %         Based Type         %         Multi-reference         % <t< th=""><th>Geog</th><th></th><th>Dang</th><th>chu</th><th>_</th><th>Block</th><th></th><th>-</th><th></th><th></th><th></th><th>k No</th><th></th><th>3</th><th>С</th><th>omp. N</th><th>0</th><th>1</th><th>V</th></t<>	Geog		Dang	chu	_	Block		-				k No		3	С	omp. N	0	1	V	
Forest Composition and Description           Mixed HC stand with young mode and scattered patches of Fir stands.Good to average condition with closed canopy.         Stand data Backare (n/2/hb)         30.           Number of tees/hb by diameter class (dbh-10cm)         Forest Type         Stand data Backare (n/2/hb)         30.           Number of tees/hb by diameter class (dbh-10cm)         Forest Type         Stand data Backare (n/2/hb)         30.           Number of tees/hb by diameter class (dbh-10cm)         Forest Type         Stand data Backare (n/2/hb)         30.           Forest Type         Stand data Backare (n/2/hb)         30.           Backare (n/2/hb)         Stand								Area	s in ł	na										
Mixed HC stand with young rboto and scattered patches of Fir stands. Good to average base condition with closed canopy.         Stand data in the stand in the stands. Good to average base condition with closed canopy.         Stand data in the stand in the stands. Good to average base condition with closed canopy.         Stand data in the stand in the stands. Good to average base condition with closed canopy.         Stand data in the stand	Non p	roductior	ר ו	1.6										<u>۱</u>				71.	8	
Base. Area (mail holds         Base. Area (mail holds         Data (mail holds)         Data (mail holds)<																				
Number of trees/he by diameter class (dbh>10cm)         Format Type         Notation         Number of trees/he by diameter class (dbh>10cm)           Format/ output         Format/ Perturber of trees/he by diameter class (dbh>10cm)         Format/ Format/ Format/ Buber Pire         Format/ Perturber of trees/he by diameter class (dbh>10cm)           Sprace         Composition         Stand Type         Notation         N			-	-		and sca	ittered pa	atches of	Fir st	ands.G	Good to	o aver	age					a		
Volume of trees ha by dameter class (dbh-10cm)         Forest Type Normary Normal Norm	conaltio	n with ci	osea c	anopy	-													<u> </u>		
Number of treesha by diameter class (dbh*10cm)         Forest Type         %         Street         Street <th col<="" td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>,</td><td>-</td><td></td></th>	<td></td> <td>,</td> <td>-</td> <td></td>																	,	-	
Number of trees/h by diameter class (dbh-16cm)           Image: head of the set of									For	est Typ	e o	% Sta	nd Type					A		
Image: state in the s		Number of	f trees/ha	by diar	neter c	lass (dbh>	10cm)													
And Decision         Closed         100         Forest Use         1         E           Nong         20         Grang         10         Forest Use         1         E           Nong         20         Grang         10         Solidion         N. Dyee         N.           Nong         20         Grang         10         Solidion         N.         Dyee         N.           Nong         20         Grang         10         Solidion         N.         Dyee         N.         Dyee         N.         Dyee         N.         Dyee         N.         Dyee															100		1	-		
And Decision         Closed         100         Forest Use         1         E           Nong         20         Grang         10         Forest Use         1         E           Nong         20         Grang         10         Solidion         N. Dyee         N.           Nong         20         Grang         10         Solidion         N.         Dyee         N.           Nong         20         Grang         10         Solidion         N.         Dyee         N.         Dyee         N.         Dyee         N.         Dyee         N.         Dyee	350 -								·		er				%			50	10	
And Decision         Closed         100         Forest Use         1         E           Nong         20         Grang         10         Forest Use         1         E           Nong         20         Grang         10         Solidion         N. Dyee         N.           Nong         20         Grang         10         Solidion         N.         Dyee         N.           Nong         20         Grang         10         Solidion         N.         Dyee         N.         Dyee         N.         Dyee         N.         Dyee         N.         Dyee	300 -														,,			20	10	
And 190         Formation	250 -														100					
190         190 <td>200 -</td> <td></td> <td>Forest</td> <td>60</td> <td></td> <td>F</td>	200 -															Forest	60		F	
Original product         Original product <thoriginal product<="" th=""> <thoriginal product<="" t<="" td=""><td>150 -</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>%</td><td></td><td></td><td>-</td><td></td></thoriginal></thoriginal>	150 -														%			-		
50 0         1000 0         10000 0         10000 0         10000 0         10000 0         10000 0         10000 0         10000 0         100000 0         1000000 0         1000000000000000000000000000000000000	100 -									-						-		10	50	
O         December         Site Characteristics         Soil Cover         %           Borner Broadleaves         BRododendron         Betula         Betula         Betula         Betula         Borner         20         Moderate         20         Moderate <td>50</td> <td></td> <td>30</td> <td></td> <td>g</td> <td>+</td> <td></td>	50														30		g	+		
Bitsperiod         Betula UOther Confers Derive         Signe         %         Sold Cover         %         Sold Cover <th< td=""><td>0 +</td><td></td><td>‱ļ</td><td></td><td></td><td></td><td>.<u></u>,</td><td></td><td>Ove</td><td></td><td></td><td>_</td><td></td><td>acteris</td><td>stics</td><td>Lopping</td><td></td><td></td><td></td></th<>	0 +		‱ļ				. <u></u> ,		Ove			_		acteris	stics	Lopping				
Price         Spruce         Permicek         Moderate         20         Moderate	■Oth	er Broadl	eaves	■Rhod		ron 🛛	Betula		Slo	•				s			er	-		
Image: Chipping         Chipping         Image: Chipping         Image: Chipping         Image: Chipping         Total (> 10         Total (> 10 <thttotal (=""> 10         Total (&gt;</thttotal>		r			e			nifers								-	<u>,</u>	-	-	
Species         0.3 <ti>3         &lt;10         10&lt;20         20&lt;30         30         30         400         40         50         50         60         60         60         90         N/ha         %           Chirpine         Image: Chirpine         I</ti>	■Blue	epine		Chirpi	ine										20		,	-		
U.3 <t.3 m<="" th="">         Clu         U.2         20         20         30         Culd 40         Culd 40</t.3>	Species				-					-			T							
Bluepine         Image: Spruce				0.3<1	.3 m	<10	10<20	20<30	30<40	40<50	50<60	60<70	70<80	80<9	90 90	0+ N	/ha	<u> </u>	%	
Hemiock       Image: Spruce																				
Fir       71       212       20       2       3       2       3       1       0       31         Other Conifers       35       11       8       6       5       18       3       1       2       55       5         Acer       11       8       6       5       18       3       1       2       55       5         Betula       -<	Hemlock																			
Other Conifers         35         11         8         6         5         18         3         1         2         1           Oak         35         11         8         6         5         18         3         1         2         55         3           Acer         Betula         - <t< td=""><td>Spruce</td><td></td><td></td><td></td><td>74</td><td>010</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td><td></td><td></td><td></td></t<>	Spruce				74	010									_					
Oak         35         11         8         6         5         18         3         1         2         55           Betula         Betula         Image: Constraint of the second s		nifers			71			20	2	-	2				0				5	
Betula         Image: Constraint of the section o	Oak				35		11	8	6		18		-	-	2			_	9	
Production         212         990         249         73         29         8         2	Acer																			
Other Broadleaves         106         248         113         12         6         5         1         1         0         133         2           Total         424         1485         373         114         44         21         22         7         3         2         587         10           Future Management & Monitoring of Activities           The matured stand of mixed HC needs to be harvested on selection basis.           Production Potential (N, Volume)         Volume of trees to be removed each year         Total         %           Of prashing         309         4         67         1002         1002         2021         2022         2023         2024         2025         2026         2027         2028         2029         2030         Total         %           Grashing         309         4         67         1002         20         2023         2024         2025         2026         2027         2028         2029         2030         Total         %           Firewood         1677         23         20         1414         2         2         2         2         2         2         2         2         2         2         2		ndron			212	000	240	72	20	0	2						261	<u> </u>	61	
Total         424         1485         373         114         44         21         22         7         3         2         587         10           Future Management & Monitoring of Activities           The matured stand of mixed HC needs to be harvested on selection basis.           Production Potential (N, Volume)         Volume of trees to be removed each year         Total         %           Product size         N total         N/ha         %         (m3)         2021         2022         2023         2024         2025         2026         2027         2028         2029         2030         Total         %           Ge Drashing         309         4         67         1002         20         2021         2022         2023         2026         2027         2028         2029         2030         Total         %           Ge Drashing         309         4         67         1002         20         20         2021         2022         2023         2024         2025         2026         2027         2028         2029         2030         7         7         3         2         587         100           Ge Drashing         2026         410         701			es									1	0						24	
Production Potential (N, Volume)       Volume of trees to be removed each year       Total       %         Product size       N total       N/ha       %       (m3)       2021       2022       2023       2024       2025       2026       2027       2028       2029       2030       %         %       Drashing       309       4       67       1002	Total										22				2				100	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$												f Ac	tivitie	es						
Product size         N total         N/ha         %         (m3)         2021         2022         2023         2024         2025         2026         2027         2028         2029         2030         Total         %           Orashing         309         4         67         1002         3750         0 <th0< th="">         0         <th0< th=""></th0<></th0<>																				
Orashing         309         4         67         1002							0004				-						Т	otal	%	
1142       16       67       3750       1	-						2021	2022	2023	2024	2025	2026	2027	202	0 20	29 20	50			
Tsim       Image: state st	2	U			67				L				L	L			_			
Tsim       Image: state st	욱 Chan				20															
Poles, etc.       Image: constraint of the system of the sys			1677	23		1414											+			
Poles, etc.       Image: constraint of the system of the sys	Firew		2926	41	10	701											+			
Silvicultural Measures         Area in ha to be implemented per year         Total         %           Measure         Area (ha)         in %         2021         2022         2023         2024         2025         2026         2027         2028         2029         2030         %           Planting         Image: Control of the second sec		s, etc.			2															
Measure         Area (ha)         in %         2021         2022         2023         2024         2026         2027         2028         2029         2030         Total         %           Planting         Image: Control of the control				34		174		A	0.2 10 1	1 a t a t	o imat	mont	d nor	Veer						
Planting         Image: Constraint of the second secon	Measure		130165	Area	(ha)	in %	2021			-		•			8 20	29 20:	30 T	otal	%	
Felling (Firewood)         78.9         100         Image: Constraint of the second s	Planting				/															
Felling (Timber)     Image: Constraint of the second	Thinning		\ \	70	0	100														
No activity			)	/8	.9	100								-	_		+			
													L	L				_		
			ried ou	t by		Karma R	inchen								Y	/ear:		2021		

					Com	partm	nent	Rec	ord								
Geog	Da	ngchu		Block		shi Dingl				k No		3	С	omp.	. No		V
						Area	s in ł	na									
Non pro	oduction	1.0		Prote	ection	7.0				P	roductior	า				107	'.2
				Fore	st Con	npositi	on a	nd D	escr	ipti	on						
Fir forest	with mixed	H/C sta	nds cl	osed to	open car	nopy, goo	od to a	averag	e con	dition	. Natura			St	and da	ata	
regenerat	tion of Fir a	nd Rhoo	lo sta	nds.								E	Bas. A	Area (	(m2/ha)		23.8
												١	/olum	ie (m3	3/ha)		182.1
												١	/olum	ie con	nifer %		42%
N	umber of trees	/ha by dia	neter c	lass (dbh>	10cm)			est Type	e (		tand Type	•	%		P+firew.	A	S
300					,		Her	nlock			lantation		100	Туре		%	%
								uce			atural oppice		100	Firew Bamb		85	31
250 -								ed Conif	er		anopy		%	Cane			
200 -								e Pine			ense			Daph	ne		8
								r Pine			losed		54 46				
150 -								dwood ed H/C			pen nstocked		40	Fores	st Use	1	Е
100 -								Class			ondition		%	Туре		%	%
							You				ood		38	Grazi	ng	23	
50 -								nature			verage		62	Shoks	<u> </u>	+	<u> </u>
0			iii				Mat		8		oor		-41	Loppi	ing	+	
10<20	20<30 30 r Broadleaves				70<80 a	30<90 90 4	Slo	ermature pe			Site Char rosivenes	<u> </u>	stics %	Soil C	Cover		%
Acer	I DI Uduleaves	Oak		C	Other Co	nifers	Ger	-			table	-	77	High			46
⊠Fir ■Bluep	nine	Sprud Chirp		R	Hemlock			derate			loderate		15	Mode	rate	-	31
- Bido						N1/L	Ste	·		-	nstable	_	8	Low	Tatal		23
Species		Heig 0.3<1	-	<10	10<20			diame			0 70<80	80<	90 9	0+	Total N/ha		<u>cm)</u> %
Chirpine		0.0 4	.0 m	10	10 - 20	20 400	00 40	40 400	00.00	00 1	010.00	00 -	50 5	•	N/IIG		/0
Bluepine																-	
Hemlock																	
Spruce													_			_	
Fir Other Cor	.:f		571	381	9	31	6	3	1		3 3		4			1	14
Other Cor Oak	mers					6 19	2	2	1		0		_			7	2 5
Acer			54		52	3	6	4			0					6	15
Betula				190	35	9	11	6	2		1		0		6	4	14
Rhododen			871	816	96	25	14								13	-	30
Other Bro	adleaves		27	54	78		3	5	1		0 0		_			8	20
Total			1524	1442	270	94	43	20	6		6 4		4		44	0	100
			F	M.			N/	- 14									
The matu	ure Firand B			<b>ure Ma</b> hould be									lotted	d as f	irewoo	d.	
		etula sta	inds s	hould be		ed as tim	ber ar	id the f	Rhodo	stan	ds can l	be al		d as f	irewoo	od.	
Proc	duction Pote	etula sta ential (N,	volu	hould be	harveste	ed as tim Volu	ber ar	trees	Thodo to be	stan	ds can l ved eacl	be al	ar			od. Total	%
Proc Product si	duction Pote	etula sta ential (N, al N/ha	Volui	hould be		ed as tim	ber ar	trees	Thodo to be	stan	ds can l	be al	ar	d as f		_	%
Proc	duction Pote ize N tot ing 730	etula sta ential (N, al N/ha 7	volu	hould be	harveste	ed as tim Volu	ber ar	trees	Thodo to be	stan	ds can l ved eacl	be al	ar			_	%
Proc Product si Broduct si Crashi Firewo	duction Pote ize N tot ing 730 bod 218 996	ential (N, al N/ha 7 2	Volui % 56	hould be me) (m3) 2822	harveste	ed as tim Volu	ber ar	trees	Thodo to be	stan	ds can l ved eacl	be al	ar			_	%
Product si 09 Drashi A Firewo 64 Cham 65 Firewo	duction Pote ize N tot ing 730 bod 218 996 bod 1160	etula sta ential (N, al N/ha 7 3 2 3 3 11	Volui	hould be (m3) 2822 648 970 917	harveste	ed as tim Volu	ber ar	trees	Thodo to be	stan	ds can l ved eacl	be al	ar			_	%
Product si 09 Drashi A Firewo 64 Cham 65 Firewo	duction Pote ize N tot ing 730 pod 218 996 pod 116 672	etula sta ential (N, al N/ha 7 3 2 3 3 11	Volui % 56	ne) (m3) 2822 648 970	harveste	ed as tim Volu	ber ar	trees	Thodo to be	stan	ds can l ved eacl	be al	ar			_	%
Product si Drashi Firewc 67-02 Scott Firewc 87-02 Firewc Firewc Firewc Firewc	duction Pote ize N tot ing 730 218 996 500d 116 672 500d	etula sta ential (N, al N/ha 7 3 2 3 3 11	Volui % 56 31	hould be (m3) 2822 648 970 917	harveste	ed as tim Volu	ber ar	trees	Thodo to be	stan	ds can l ved eacl	be al	ar			_	%
Product si Product si 054 Firewor 6700 Firewor 70000 Firewo	duction Pote ize N tot ing 730 218 996 bod 116 672 bod etc.	etula sta ential (N, al N/ha 7 2 3 11 6	Volui % 56 31	ne) (m3) 2822 648 970 917 272	harveste	ed as tim Volu	ber ar	trees	Thodo to be	stan	ds can l ved eacl	be al	ar			_	%
Proc Product si 02 60 60 60 60 60 60 60 60 60 60 60 60 60	duction Pote ize N tot ing 730 218 996 bod 116 672 bod etc.	etula sta ential (N, al N/ha 7 2 3 11 6 3 11 6 3 70	Volui % 56 31 4	hould be (m3) 2822 648 970 917	harveste	Volu 2022	ime of 2023	trees 2024	to be 1 2025	remor 202	ds can l ved eacl	n yea 202	ar		2030	Total	
Proc Product si 02 60 60 60 60 60 60 60 60 60 60 60 60 60	Juction     Pote       ize     N tot       ing     730       bood     218       996     996       bood     116       672     672       bood     1       etc.     500       bood     7460	etula sta ential (N, al N/ha 7 2 3 11 6 3 11 6 3 70	Volui % 56 31 4 8	ne) (m3) 2822 648 970 917 272	harveste	Volu 2022	ime of 2023	trees 2024	to be 1 2025	remov 202	ds can b	h year	ar 8 200		2030	_	%
Product si Drashi Geo 6700 Firewo Firewo Firewo Firewo Firewo Firewo Silvicultu Measure Planting	Juction     Pote       ize     N tot       ing     730       bood     218       996     996       bood     116       672     672       bood     1       etc.     500       bood     7460	etula sta ential (N, al N/ha 7 2 3 11 6 3 11 6 3 70 <b>s</b>	Volui % 56 31 4 8	me) (m3) 2822 648 970 917 272 518	2021	Volu 2022	ime of 2023	trees 2024	to be 1 2025	remov 202	ved each 3 2027 ted per	h year	ar 8 200		2030	Total	
Product si Product si Product si Product si Firewc 64-01 Firewc Silvicultu Measure Planting Thinning	duction Pote ize N tot ing 730 bod 218 996 bod 1160 672 bod 672 bod 7460 ral Measure	etula sta ential (N, al N/ha 7 2 3 11 6 3 11 6 3 70 <b>s</b>	Volui % 56 31 4 8	me) (m3) 2822 648 970 917 272 518	2021	Volu 2022	ime of 2023	trees 2024	to be 1 2025	remov 202	ved each 3 2027 ted per	h year	ar 8 200		2030	Total	
Product si Product si Drashi Firewc 64-00 Firewc 64-01 Firewc Silvicultu Weasure Planting Fieling (Fir	duction Pote ize N tot ing 730 bod 218 996 bod 1160 672 bod 672 bod 7460 ral Measure rewood)	etula sta ential (N, al N/ha 7 2 3 11 6 3 70 8 3 70 8 Area	Volut % 56 31 4 8 (ha)	ne) (m3) 2822 648 970 917 272 518 518	2021	Volu 2022	ime of 2023	trees 2024	to be 1 2025	remov 202	ved each 3 2027 ted per	h year	ar 8 200		2030	Total	
Proc Product si Drashi Firewo 64 Of Firewo Firewo 64 Of Firewo 64 Of F	duction Pote ize N tot ing 730 bod 218 990 bod 116 672 bod etc. bod 746 ral Measure rewood) mber)	etula sta ential (N, al N/ha 7 2 3 11 6 3 11 6 3 70 <b>s</b>	Volut % 56 31 4 8 (ha) .6	me) (m3) 2822 648 970 917 272 518	2021	Volu 2022	ime of 2023	trees 2024	to be 1 2025	remov 202	ved each 3 2027 ted per	h year	ar 8 200		2030	Total	

						Com	partn	nen	t Re	cor	ď									
Geog	[	Dango	chu		Block		ashidingl				lock	No	;	3	C	Com	p. No		\	/I
							Area	ıs in	ha											
Non produ	uction		1.1		Prote		4.6						ductior	<u>ו</u>					32.0	)
						st Con														
Fir forest w	-	-					part,good	d to a	average	e con	ditic	n wit	h				Stand			
profuse reg	enerat	ion o	t Fir a	na Rr	nodo spe	cles.								-			1 (m2/h	a)		27.3
														-			n3/ha)	,	ż	220.3
[								F	orest Ty	ne	%	Sta	nd Type		volun %		onifer % /FP+firev		A	59% s
	ber of tr	ees/ha	by dian	neter c	lass (dbh>	10cm)			lemlock		25		ntation	-	/0	Тур			%	%
300									ir		75	Nat			100	_	ewood		25	38
250 -									pruce lixed Con	ifor		_	opice nopy		%	Bar Car	nboo		38	13
									lue Pine	liei		Der			/0	_	ohne			13
200 -									hir Pine				sed		75					
150 -									lardwood lixed H/C			Ope	en stocked		25	<b>F</b> au	est Use	_	1	Е
100 -									ge Class	;	%		ndition		%	Тур			• %	⊑ %
									oung		25	God			50		zing			
50 -			9						nmature				erage		50		kshing	-	4	
									lature Vermature	_	75	Poo	or ite Char	actori	istics	Lop	ping	_	_	
10<20	20<30	30<40	40<50 ■Rhode	50<6 odend		70<80 8 Betula	80<90 90	+	lope	,	%		sivenes		%	Soi	I Cover		9	6
⊠Acer	ouulou		Oak			Other Co	nifers		ientle		50	Sta			75	Hig				!5
☑ Fir ■Bluepine	e		■Spruc ■Chirpi			Hemlock		1 I E	loderate teep		25 25		derate stable		25	Mod	derate	_	7	5
<b>o</b>			Heig	iht			<b>N</b> /	-	er diam	eter o	-		able					al (>	10c	m)
Species			0.3<1	.3 m	<10	10<20	20<30	30<4	10 40<5	0 50<	60 6	0<70	70<80	80<	90 9	90+	N/ha	a	0	6
Chirpine																				
Bluepine Hemlock															_			_		
Spruce																				
Fir				796	796	85	31	1	0 8	8	6	9	3		2		1	155		36
Other Conife	rs			88	133	42	10		5		2							60		14
Oak Acer						42	20	1	0 9	9	3	2						87		20
Betula						.2	20			3	1	-						4		1
Rhododendro				398	1813	57	10		3		1	1						71		16
Other Broadl Total	leaves			1282	2741	28 255	10 <b>81</b>		8 ( 6 2)	6 7	3 17	11	1		2			57 134		13 100
TOLAI		I		-	ure Ma		-		-				-		2			+34		100
The matured						for fellinç	g and the	Rho	odo stai	nds c	an t	e all	otted a	as fir	rewo	od.				
Produc									of trees				-					Tot	al	%
<ul> <li>Product size</li> <li>Drashing</li> </ul>		total 075	N/ha 13	%	(m3) 3431	2021	2022	202	3 2024	1 202	25 2	2026	2027	202	28 2	029	2030			
Drashing Firewood		512	6	65	1516										+				+	
ଙ୍ tham	8	358	10	29	1081															
		071	13	20	1131														-	
75 Tsim Firewood		418 335	5 10	5	134 232			-		-				-	+				+	
			10	4	202			-						-	+				+	
Firewood	1 1	160	14	1	83															
Silvicultural	Measu	ures	A	(h=)	ir 0/	2024			ha to l							000	0000	Tot	al	%
Measure Planting			Area	(na)	in %	2021	2022	202	3 2024	1 202	25 2	2026	2027	202	28 2	029	2030			
Thinning								-		-					+				+	
Felling (Firew			11.		13															
Felling (Timb	er)		65.		75														_	
No activity Assessment	t carrie	h ou	11. t bv	U	13 Kinley Do	rii										Year	 r•	ן כר	21	
assasinelli		.u 00	. Лу		I WILLY DU	יןי										1 cal		20	<u> </u>	

Geog         Dargchu         Block         Tasa         Block No         4         Comp. No         1           Areas in ha           Non production         0.4         Protection         20.8         Production         15.5           Stand data           Base Area (m2/ha)         16.5           Mixed H/C stands with closed to open canopy and average stand condition.         Stand data           Base Area (m2/ha)         16           Volume confer %           Momber of treesha by diameter class (bbh>10cm)           Forest Type %         Stand data           Base Area (m2/ha)         16           Number of treesha by diameter class (bbh>10cm)           Forest Type %         Stand data           Since         Copie         Base Area (m2/ha)         16           Momber of treesha by diameter class (bbh>10cm)         Base Area (m2/ha)         10         Base Area (m2/ha)         16           Momber of treesha by diameter class (bbh>10cm)         Chare         Marea         10         Derace         Data         Base Area (m2/ha)         16           Momber of treesha by diameter class         Data							Com	partn	nent	t Rec	cord									
Non production         0.4         Protection         20.8         Production         16.5           Mixed H/C stands with closed to open canopy and average stand condition.         Stand data Bas. Area (m2/na)         16           Number of tress/ha by diameter class (dbh>10cm)         Stand data Bas. Area (m2/na)         16           Number of tress/ha by diameter class (dbh>10cm)         Stand data Bas. Area (m2/na)         16           Number of tress/ha by diameter class (dbh>10cm)         Stand data Bas. Area (m2/na)         16           Number of tress/ha by diameter class (dbh>10cm)         Stand data Bas. Area (m2/na)         16           Number of tress/ha by diameter class (dbh>10cm)         Stand coater Bas. Dock           Species         Dotak         Dotat <thdo< th=""><th>Geo</th><th>og</th><th>Dar</th><th>gchu</th><th></th><th>Block</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>4</th><th>С</th><th>omp</th><th>o. No</th><th></th><th>1</th></thdo<>	Geo	og	Dar	gchu		Block								4	С	omp	o. No		1	
Forest Composition and Description           Stand data           Bit Area (m2/ma)         16           Mumber of treashs by diameter class (tith="toon)           Forest Composition           Bit Area (m2/ma)         16           Number of treashs by diameter class (tith="toon)           Forest Yave         Number of treashs by diameter class (tith="toon)           Forest Yave         Number of treashs by diameter class (tith="toon)           Forest Composition           Product Contrast         Forest Yave         Number of treashs by diameter class (tith="toon)           Forest Yave         Number of treashs by diameter class         Number of treashs by diameter class           Manual Yave         Number of treash by diameter class         Manual Yave         Number of treash by diameter class           Barbon of the Yave         Number of treash diameter class         Number of treash diameter class           Product Same Treash andin the Numa Yave         Number of treash d								Area	s in	ha										
Stand data         Stand data         Bas. Area (m2/hm3)         Title           Number of trees/he by dameter class (dbh/18cm)         Forest Type         %         Stand data         Title           Number of trees/he by dameter class (dbh/18cm)         Forest Type         %         Stand data         Title         Stand         Title         Stand         Colspan="2">Stand         Colspan="2">Stand         Colspan="2">Colspan="2"         Stand         Colspan="2"         Colspan="2"         Stand         Colspan="2"         Colspan="2"         Colspan="2"         Colspan="2"         Colspan="2"         Colspan="2"         Colspan="2"         Colspan="2"         Colspan="2"         Colspan="2" <th <="" colspa="2" td=""><td>No</td><td>n product</td><td>ion</td><td>0.4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>ו</td><td></td><td></td><td></td><td>15</td><td>.5</td></th>	<td>No</td> <td>n product</td> <td>ion</td> <td>0.4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>ו</td> <td></td> <td></td> <td></td> <td>15</td> <td>.5</td>	No	n product	ion	0.4										ו				15	.5
Bas. Area (nor)/model												iptic	on							
Volume (n1/m)         119           Volume (n1/m)         119           Volume (n1/m)         Volume (n1/m) <td>Mixed</td> <td>d H/C sta</td> <td>ands wit</td> <td>h close</td> <td>d to c</td> <td>pen can</td> <td>opy and a</td> <td>average</td> <td>stand</td> <td>conditi</td> <td>on.</td> <td></td> <td></td> <td></td> <td>_</td> <td>-</td> <td></td> <td></td> <td></td>	Mixed	d H/C sta	ands wit	h close	d to c	pen can	opy and a	average	stand	conditi	on.				_	-				
Volume of tresha by dameter class (dbh>10cm)           Formation         Stant Type         %         WTPPrinters         A         Stant Type         %         WTPPrinters         A         Stant Type         %         WTPPrinters         A         Stant Type         %         WTPPrinters         %         WTPPrinters         %         WTPPrinters         %         Colspan="2"         %         WTPPrinters         %         Colspan="2"         %          % <th c<="" td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>H</td><td></td><td></td><td></td><td>1)</td><td>16.0</td></th>	<td></td> <td>H</td> <td></td> <td></td> <td></td> <td>1)</td> <td>16.0</td>														H				1)	16.0
Number of trees/ha by diameter class (dbh>10cm)         Forse Topic         N         Number of trees/ha by diameter class (dbh>10cm)           200         Image: State of the stat														-			,	_	119.8	
200         Production         Use introduction         Use introductintredint         Use introduction									Fo	rest Typ	e (	% St	and Type					_	S	
100         100 <td>200 -</td> <td>Numbe</td> <td>r of trees/</td> <td>na by dia</td> <td>meter o</td> <td>class (dbh&gt;</td> <td>•10cm)</td> <td></td> <td>%</td> <td>%</td>	200 -	Numbe	r of trees/	na by dia	meter o	class (dbh>	•10cm)											%	%	
100         Mass Confir         Carsey         % Core         33           100         Deprine         Deprine         Deprine         0         33           100         Open and the set of the set															100	-		67		
Too         Care Price         Classed         67         Image: Classed         70	160 -										er		••		%			01		
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No.         Marcel HC         Total         Forest Use         I         E           0         Image Dises         %         Condition         %         Type         0         Signal         %         %         %           0         Image Dises         File         Signal         Signal         Signal         Signal         Signal         Image Dises         Signal         Image Dises         Signal         Image Dises         Signal         Signal         Image Dises										-		-			-				-	
and do do do do service         Accol case         %         Condition         %         Type         %         %           Yourg         Good         Gradient         <									Mi	xed H/C	1					Fore	est Use	I	E	
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Point of the second s	40 -									-					67					
0         Decision and a local         Decision and local <thdecision a="" and="" local<="" th=""></thdecision>					<b>n</b>						1	00 Pc	or		33					
Brace         Brouce         Dother Confers         Dother Confers         Environmental         Image: Conferse of the co	-							30<90 90	+							0.01	<b>C</b>	_	0/	
Billuopine         Billopine         Indicatable         Indicatable <thindit< th="">         Indit         Indicatab</thindit<>			adleaves		odend			nifers						s	70	_				
Species         Height 0.3<1.3 m         V/ha         V/ha         Total (> 10cm)           Chirpine         10         10         20<30						0	Hemlock								100	Mod			33	
Species         0.3         0.3         10         10         20         20         30         40         40         50         60         60         70         80         80         90+         N/ha         %           Chirpine		Blaopino						N/		· · P			stable			Low	Tota	1/> 10	(cm)	
Bluepine         Image: Spruce	Speci	ies			-	<10	10<20						0 70<80	80<	90 9	0+		<u> </u>		
Hemiock         Spruce         Image: Constraint of the second sec	Chirpi	ine																		
Spruce         Image: Spruce </td <td></td> <td>_</td> <td></td>																		_		
Fir         Other Conifers         Other Conifers <td></td>																				
Oak         75         14         7         4         1         101         5           Acer         14         14         6         14         6         14         6           Betula         14         14         14         14         14         14           Other Broadleaves         113         7         13         2         5         1         140         5           Total         189         27         35         17         6         2         5         2         282         10           Future Management & Monitoring of Activities           Felling of matured stands of mixed H/C on single tree selection methodis recommended.         76         2         5         2         2030         76           %         Drashing         55         4         44         185         2         2026         2027         2028         2039         2030         76         4         422         2																				
Acer       Image: Constraint of the second constraint of		Conifers													-					
Betula         Image: Mark and the stands of mixed H/C on single tree selection methodis recommended.         Image: Mark and the stands of mixed H/C on single tree selection methodis recommended.         Image: Mark and the stands of mixed H/C on single tree selection methodis recommended.           Production Potential (N, Volume)         Volume of trees to be removed each year         Total         Total         Image: Mark and the stands of mixed H/C on single tree selection method is recommended.           Product size         N total         N/na         %         (m3)         2021         2022         2023         2024         2025         2026         2029         2030         Total         %           © Drashing         55         4         44         185         2         2         2         2023         2024         2025         2026         2027         2028         2039         Total         %           © Drashing         55         4         44         185         2         <							/5	14	<u> </u>	4					1		1	-	36 2	
Other Broadleaves         113         7         13         2         5         1         140         5           Total         189         27         35         17         6         2         5         2         282         10           Future Management & Monitoring of Activities           Felling of matured stands of mixed H/C on single tree selection methodis recommended.         Total         % <td></td> <td>a</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>14</td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td>5</td>		a							14	1								-	5	
Total         189         27         35         17         6         2         5         2         282         10           Future Management & Monitoring of Activities           Felling of matured stands of mixed H/C on single tree selection methodis recommended.           Production Potential (N, Volume)         Volume of trees to be removed each year         Total         %           Product size         N total         N/ha         %         (m3)         2021         2022         2023         2024         2025         2026         2027         2028         2030         Total         %           g         Drashing         55         4         44         445         -								14	-										7	
Future Management & Monitoring of Activities           Felling of matured stands of mixed H/C on single tree selection methodis recommended.           Production Potential (N, Volume)         Volume of trees to be removed each year           Product size         N total         N/ha         %         (m3)         2021         2022         2023         2024         2025         2026         2027         2028         2029         2030         Total         %           %         Drashing         55         4         44         185         -			aves					27											50 100	
Production Potential (N, Volume)         Volume of trees to be removed each year         Total         %           Product size         N total         N/ha         %         (m3)         2021         2022         2023         2024         2025         2026         2027         2028         2029         2030         Total         %           g         Drashing         55         4         44         422 <td< td=""><td>TOLAI</td><td></td><td></td><td></td><td>Fut</td><td>ure Ma</td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td><td>2</td><td>_</td><td></td><td>02</td><td>100</td></td<>	TOLAI				Fut	ure Ma					-				2	_		02	100	
Product size         N total         N/ha         %         (m3)         2021         2022         2023         2024         2025         2026         2027         2028         2029         2030         Total         %           %         Drashing         55         4         44         185	Fellin	ngof ma	tured st	ands of	mixe	d H/C or	n single tr	ee selec	tion m	nethodi	s reco	mmer	ided.							
Product size         N total         N/ha         %         (m3)         2021         2022         2023         2024         2025         2026         2027         2028         2029         2030           Ø         Drashing         55         4         44         185         Image: Constraint of the second seco					-			-										Total	%	
Image: Simple set condition         Image: Simple set conditity         Image: Simple set condition <t< td=""><td></td><td></td><td></td><td></td><td></td><td>· · · ·</td><td>2021</td><td>2022</td><td>2023</td><td>2024</td><td>2025</td><td>2026</td><td>2027</td><td>202</td><td>28 20</td><td>J29</td><td>2030</td><td></td><td></td></t<>						· · · ·	2021	2022	2023	2024	2025	2026	2027	202	28 20	J29	2030			
Cham       173       11       31       178  .	۲ Fi				44								1	-					+	
No         Tsim         Image: state		ham		_	- 31															
Poles, etc.         Image: constraint of the system of			238	15		245								-	_	$\rightarrow$			+	
Poles, etc.         Image: constraint of the system of	707 Fi	irewood	422	27	9	119				+			+						+	
Silvicultural Measures         Area in ha to be implemented per year         Total         %           Measure         Area (ha)         in %         2021         2022         2023         2024         2025         2026         2027         2028         2029         2030         %           Planting         Image: Control of the state	o Da	alos ata			16															
Measure         Area (ha)         in %         2021         2022         2023         2024         2025         2026         2027         2028         2029         2030         Total         %           Planting         Image: Constraint of the state						220				ho ér l										
Planting         Image: Constraint of the second secon			leasures		(ha)	in %	2021									029	2030	Total	%	
Felling (Firewood)         24.5         67   <					(	/•														
Felling (Timber)         12.2         33					_	07														
No activity				_												_			+	
		<b>.</b> .	/	12	∠	- 55							1	-					+	
			arried o	ut by		Tashi Ph	untsho		·		·	·	·			Year	:	202	1	

Geog					Com	partm	nent	Rec	ord								
	Dang	chu		Block		Tasa			Bloc	k No	4	1	С	omp	. No		
						Area	s in h	a									
Non productio	n			Prote		14.9				-	ductior	1				210	0.6
						npositi				iptio	n						
Mixed HC stan			•		•		. 0		erage						and da		
condition.Natur	al reger	neratio	n of t	ooth mixe	ed HC ar	id Rhodo	spps.	•				-			(m2/ha)	-	21.9
												_	/olum		,	_	160.3
							For	est Type		% Sta	nd Type	_	/oium %		nifer % P+firew.	A	8% s
	of trees/ha	a by diar	neter c	lass (dbh>	10cm)			nlock	-		ntation		/0	Туре	F fillew.	%	%
140							Fir			Nat	ural		100	Firew	ood	43	9
120 -							Spr				ppice	_		Bamb		57	17
100								ed Conifi e Pine	er	Ca De	nopy	-	%	Cane Daph		13	9
								r Pine			sed		78	Daph		10	5
80 -							Har	dwood		9 Op	en		22				
60 -	m							ed H/C		-	stocked	_			st Use	1	E
40							Age You	e Class		% <b>Co</b> 9 Go	ndition		% 43	Type Grazi	na	% 22	% 21.74
		1 						ng nature			erage	-+	43	Shok	Ū.	22	21.74
20 -							Mat			9 Po	<u> </u>		9	Loppi			
0	30 30<40	40<50	50<6		70<80	30<90 90 4	-	rmature		_	ite Char	<u> </u>					
Other Broad	lleaves	■Rhode ■Oak		ron 🛛	Betula Other Co		Slo Ger			& Ero	sivenes	s	% 74		Cover		<mark>%</mark> 61
⊠ Acer ⊠ Fir	1	Spruc			Hemlock	niiers		tte derate			bie derate		17	High Mode	erate		22
Bluepine		Chirpi	ine				Ste				stable		9	Low			17
Species		Heig	-					diame						_	Total		
•		0.3<1	.3 m	<10	10<20	20<30	30<40	40<50	50<60	60<70	70<80	80<	90 9	0+	N/ha		%
Chirpine Bluepine													-			_	
Hemlock			46					2	2	0	1		0			5	2
Spruce										-			-			-	
Fir																	
Other Conifers																_	
Oak Acor			15 77	31	25 5	5	1 11	7	1	1	1		0		2	8	9 11
Acer Betula			11	31	5	5	7	7	3	1	0		0	_	2		7
Rhododendron			231	277	59	35	22	3	0	0					12		40
	/es		231	62	30	16	25	13	4	3	1				9	1	31
Other Broadleav					123	60		~-	12							•	
Other Broadleav Total			600	369	-		66	27		6	-		0		29		100
Total	red trees		Fut	ure Ma	nagen	nent &	Мо	nitori	ing c	of Act	tivitie		-	s car		7	
Total Felling of matur firewood.		s and f	Futi	ure Ma	nagen	n <b>ent &amp;</b> ed HC st	Moi ands i	nitori s reco	mmer	ded a	t <b>ivitie</b> nd Rho	do s	itand	s car		7	
Total Felling of matur firewood. Production	n Potent	s and f	Futi thinnii	ure Ma	es in mix	nent & ed HC st Volu	Mor ands i	nitori s reco trees	mmer	f Act ded a	tivitie nd Rho	do s	itand		i be al	7	
Total Felling of matur firewood. Production Product size	n Potent	s and f tial (N, N/ha	Futu thinnin Volu	me)	nagen	n <b>ent &amp;</b> ed HC st	Mor ands i	nitori s reco trees	mmer	f Act ded a	t <b>ivitie</b> nd Rho	do s	itand	s car	i be al	7 lotted	as
Total Felling of matur firewood. Production Product size	n Potent	s and f	Futi thinnii	ure Ma	es in mix	nent & ed HC st Volu	Mor ands i	nitori s reco trees	mmer	f Act ded a	tivitie nd Rho	do s	itand		i be al	7 lotted	as
Total Felling of matur firewood. Product size Orashing Firewood	N total 1793 683 2598	tial (N, N/ha 9 3 12	Volue % 46	me) (m3) 5078 1557 2586	es in mix	nent & ed HC st Volu	Mor ands i	nitori s reco trees	mmer	f Act ded a	tivitie nd Rho	do s	itand		i be al	7 lotted	as
Total Felling of matur firewood.  Product size G Cham Cham Firewood	n Potent N total 1793 683	s and t tial (N, N/ha 9 3	Futu thinnin Volu	<b>ure Ma</b> ng of ploo (m3) 5078 1557	es in mix	nent & ed HC st Volu	Mor ands i	nitori s reco trees	mmer	f Act ded a	tivitie nd Rho	do s	itand		i be al	7 lotted	as
Total Felling of matur firewood.  Product size G Cham Cham Firewood	Potent           N total           1793           683           2598           5117	s and t tial (N, N/ha 9 3 12 24	Volue % 46	me) (m3) 5078 1557 2586 4489	es in mix	nent & ed HC st Volu	Mor ands i	nitori s reco trees	mmer	f Act ded a	tivitie nd Rho	do s	itand		i be al	7 lotted	as
Total Felling of matur firewood.  Production Product size Contemporation Prevent Size	N total 1793 683 2598	tial (N, N/ha 9 3 12	Volu           %           46           49           2	me) (m3) 5078 1557 2586	es in mix	nent & ed HC st Volu	Mor ands i	nitori s reco trees	mmer	f Act ded a	tivitie nd Rho	do s	itand		i be al	7 lotted	as
Total Felling of matur firewood.  Production Product size Contemporation Prevent Size	Potent           N total           1793           683           2598           5117	s and t tial (N, N/ha 9 3 12 24	Volue % 46 49	me) (m3) 5078 1557 2586 4489	es in mix	nent & ed HC st Volu	Mor ands i	nitori s reco trees	mmer	f Act ded a	tivitie nd Rho	do s	itand		i be al	7 lotted	as
Total Felling of matur firewood.  Production Product size G Cham G Cham G Firewood G Fir	n Potent N total 1793 683 2598 5117 1119 5180	s and f tial (N, N/ha 9 3 12 24 5	Volu           %           46           49           2	<b>me)</b> (m3) 5078 1557 2586 4489 264	es in mix	Volu 2022	Moi ands i me of 2023	trees 2024	to be 2025	emove 2026	ed each	do s 202	itand		2030	7 lotted	85 %
Total Felling of matur firewood.  Product size Broduct size Cham Firewood Tsim Firewood Firew	n Potent N total 1793 683 2598 5117 1119 5180	s and f tial (N, N/ha 9 3 12 24 5	Volu           %           46           49           2           3	<b>me)</b> (m3) 5078 1557 2586 4489 264	es in mix	Volu 2022	Moi ands i me of 2023	trees	to be 2025	emove 2026	ed eacl	do s 202	IT		2030	7 lotted	as
Total Felling of matur firewood. Product size Product size Drashing Firewood Prewood Cham Firewood Firewood Firewood Firewood Firewood Firewood Firewood Firewood Firewood Firewood Firewood Poles, etc. Firewood Poles, etc. Firewood Poles, etc. Poles, etc. Firewood Poles, etc. Firewood Poles, etc. Firewood Poles, etc. Poles, etc. Poles, etc. Firewood Poles, etc. Firewood Firewood Poles, etc. Firewood Poles, etc. Poles, etc. Poles, etc. Poles, etc. Firewood Poles, etc. Poles, etc. Firewood Poles, etc. Firewood Poles, etc. Poles, etc. P	n Potent N total 1793 683 2598 5117 1119 5180	s and t tial (N, N/ha 9 3 12 24 5 5 25 Area	Volut           %           46           49           2           3           (ha)	<b>me)</b> (m3) 5078 1557 2586 4489 264 404 in %	2021	Volu 2022	Moi ands i me of 2023	trees 2024	to be 2025	emove 2026	ed each	do s 202	IT		2030	7 lotted	85 %
Total Felling of matur firewood.  Product size  Product size  Firewood  Firewood  Cham  Cham  Firewood  Firewood  Firewood  Firewood  Firewood  Silvicultural Me Measure Planting Thinning	n Potenti 1793 683 2598 5117 1119 5180 easures	s and t tial (N, N/ha 9 3 12 24 5 25 25 Area 19	Voluti           %           46           49           2           3           ((ha))           .6	<b>me)</b> (m3) 5078 1557 2586 4489 264 404 404 9	2021	Volu 2022	Moi ands i me of 2023	trees 2024	to be 2025	emove 2026	ed each	do s 202	IT		2030	7 lotted	85 %
Total Felling of matur firewood.  Production Product size      Orashing     Firewood     Firewood     Firewood     Firewood     Firewood     Firewood     Firewood     Silvicultural Me Measure Planting Thinning Felling (Firewood	n Potenti 1793 683 2598 5117 1119 5180 easures	s and t tial (N, N/ha 9 3 12 24 5 5 25 Area	Volu           %           46           49           2           3           ((ha))           .6           .2	<b>me)</b> (m3) 5078 1557 2586 4489 264 404 in %	2021	Volu 2022	Moi ands i me of 2023	trees 2024	to be 2025	emove 2026	ed each	do s 202	IT		2030	7 lotted	85 %
Total Felling of matur firewood. Product size Product size Prewood Firewood Cham Firewood Firewood Firewood Firewood Firewood Firewood Firewood Silvicultural Me	n Potenti N total 1793 683 2598 5117 1119 5180 sasures d)	s and t tial (N, N/ha 9 3 12 24 5 25 25 Area 9 19 88 898 19	Volu           %           46           49           2           3           (ha)           .6           .2           .0	<b>me)</b> (m3) 5078 1557 2586 4489 264 404 404 9 39	2021	Volu 2022	Moi ands i me of 2023	trees 2024	to be 2025	emove 2026	ed each	do s 202	IT		2030	7 lotted	85 %

Annex 3 Forest Management Circle Map



90°12′0.000″E 90°9′0.000″E 90°15′0.000″E 90°6′0.000″E **Blocks and Compartments** 27°42'0.000"N 27°42'0.000"N N"000.0'95°72 27°39'0.000"N 27°36'0.000"N 27°36'0.000"N Legend - River — Road 27°33'0.000"N 27°33'0.000"N Dangchu Gewog Boundary 16 Compartments Blocks Doongdoongnyelsa Tashidingkha Tokaling Tomla Yusagang CFs **Biological** Corridor 4 km n 1 2 3 WCNP 27°30'0.000"N 27°30'0.000"N Future Management Area 1:91000 Divisional Forest Office, Wangdue, 2021 90°15′0.000″E 90°6′0.000″E 90°9′0.000″E 90°12′0.000″E

ANNEXURE 4 Spatial Organization Map of Blocks and Compartments

## ANNEXURE 4 Rivers and Drainage



## ANNEXURE 4 Roads

