

# *NATIONAL FOREST POLICY REVIEW*



## *BHUTAN*

by

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## Current situation

### **Background**

Bhutan is a small landlocked country encompassing approximately 40 077 km<sup>2</sup> (RGOB 1996). It shares borders with China to the north and India to the south, west and east.

Most of the country is mountainous with elevations ranging from 160 m in the south to 7 550 m in the north. Major rivers flow towards the south from the high mountains in the north, creating valleys where most of Bhutan's population is concentrated. The terrain orientation dominates the landform, settlement patterns and transport and communication networks within the country and the overland link with neighbours.

### Land use

Forests cover 72.5 percent and pastures another 3.9 percent of the total land area. Agriculture and settlements occupy 7.7 percent and 0.1 percent respectively. Snow fields, glaciers, rocky outcrops, water bodies and marshy areas account for 15.7 percent (Table 1).

**Table 1. Land use in Bhutan**

Land use	Area in km <sup>2</sup>	% of total area
Forest	29 045	72.5
Pasture	1 564	3.9
Agriculture	3 088	7.7
Horticulture	58	0.1
Settlements	31	0.1
Others	6 291	15.7
<b>Total</b>	<b>40 077</b>	<b>100.0</b>

Source: MOA (1995)

### Population

Bhutan's population was 700 000 in 2001 (CSO 2001), with a population growth rate of about 2.55 percent (DoHS 2000). The proportion of the population under the age of 15 is 39.1 percent compared to 43.4 percent in 1994. The proportion of population in the age group of 15 to 44 years is 40.1 percent compared to 38.2 percent in 1994. In 1994, 18 percent of the population was older than 44 compared to 21 percent in 2000 (DoHS 2000).

In 2000, about 21 percent of the people lived in urban areas. The remainder inhabited rural areas and relied on agriculture (CSO 2001). In rural areas, people live in extended families. Urban people continue to maintain strong family links to rural villages. The average household size is about 5.6 (RGOB 1996). The population density is approximately 14 persons/km<sup>2</sup> (CSO 2001).

### Economy

The gross domestic product (GDP) per person at factor cost in current prices was Nu.18 514 (US\$380.55) in 1999 and rose to Nu.21 127 (US\$434.25) in 2000 (CSO 2001). After a brief setback in the early 1990s the economy has grown steadily since 1993. The importance of the agricultural sector is decreasing slowly, from 54.9 percent of the GDP in 1985 to 38 percent in 1995. The share of GDP in the mining, manufacturing, hydropower, transport, communication and financial sectors has increased (RGOB 1996) (Table 2). Hydroelectricity production has been the major engine of growth and has the potential to contribute significantly to economic growth in the future (RGOB 1996).

**Table 2. Sector-wise shares of GDP in 1985 and 1995 (at 1980 prices)**

Sectors	1985	1995	Average growth (%)
Agriculture	54.9	38.0	2.9
Mining and quarrying	0.8	1.3	11.6
Manufacturing	4.9	9.1	13.5
Electricity	0.4	8.3	48.2
Construction	11.1	10.8	6.5
Trade and other activities	8.7	6.0	3.0
Transport and communication	5.2	8.2	11.8
Financial services	7.2	9.5	9.8
Community and social services	8.2	10.9	9.8
(Less imputed bank services charges)	-1.6	-2.1	
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	

Source: Eighth Five-year Plan (1997–2002) Vol. I (main document)

### **Forest resources**

The total growing stock (volume of the stem wood of standing timber with bark) is 686.3 million m<sup>3</sup>. Only 184 million m<sup>3</sup> are available in operable forest areas. The annual allowable cut (AAC) for the operable areas is 1.2 million m<sup>3</sup> (RGOB 1991b). However, because of environmental considerations, forest harvesting does not extend across the total operable area (RGOB 1995; RGOB 2000; FRDD undated). Therefore, the concept of net operable area has become important, which reduces the AAC to about 1 million m<sup>3</sup>. The following categories of production forest are excluded from timber production:

- forest areas above 4 000 m altitude; and
- forests on slopes steeper than 100 percent.

### **Forest area and types**

The total forest area is about 2.9 million ha (MOA 1995). The per capita forest area is 4.15 ha (CSO 2001). Broadleaf forests are most important in terms of area coverage (Table 3) while coniferous forests are more productive.

**Table 3. Area of forest types**

Forest types	Area in km <sup>2</sup>	%	As % of total land area
Fir	3 453	11.9	8.6
Mixed conifers	4 868	16.8	12.1
Blue pine	1 286	4.4	3.2
Chir pine	1 009	3.5	2.5
Broadleaf and conifers	1 378	4.7	3.4
Broadleaf forest	13 793	47.5	34.4
Scrub forest	3 258	11.2	8.1
<b>Total</b>	<b>29 045</b>	<b>100.0</b>	<b>72.5</b>

Source: MOA (1995)

### **Area under forest management plans**

The production forest area covered by approved management plans is 169 991 ha or 5.8 percent of the total area. At present, approved forest management units (FMUs) cover only about 5.8 percent of the production forest and about 164 965 m<sup>3</sup> (standing volume) are prescribed for harvesting. Taking a log recovery rate of 60 percent for conifers and 40 percent for broadleaf species, the

total log production potential from all of the FMUs is 67 613 m<sup>3</sup> (conifers) and 40 391 m<sup>3</sup> (hardwoods) totalling 108 004 m<sup>3</sup> (RGOB 2002c). However, since the harvesting is carried out from the natural forest, waste is high and sawlogs that reach depots for further transport to sale depots constitute between 65 000 and 73 000 m<sup>3</sup> on average *per annum*.

### Plantation area

Forest plantations cover about 46 267 acres (DoFS 1999). About 40 200 acres (86.9 percent) are categorized as normal plantations (plantations raised by the Department of Forestry Services [DoFS]) and 3 811 acres as industrial plantation (8.2 percent). Community plantations cover less than one percent (Table 4). In the future, community forestry plantations are likely to expand, supported by a new community and private forestry policy (RGOB 2000a).

**Table 4. Total plantation area**

<b>Plantation category</b>	<b>Area (acres)</b>
Normal plantations	40 209
Plantations created by the FDCL	1 818
Industrial plantations	3 811
Community plantations	4 289
<b>Total area</b>	<b>46 267</b>

Source: Social Forestry & Afforestation Division

### Protected areas

About one million ha are managed as protected areas, which is 26 percent of the total land area of the country (RGOB 1996; 1998b). Another nine percent of the land area has been declared as biological corridors to facilitate animal movements.

## ***Production, trade and wood consumption***

### Total roundwood production

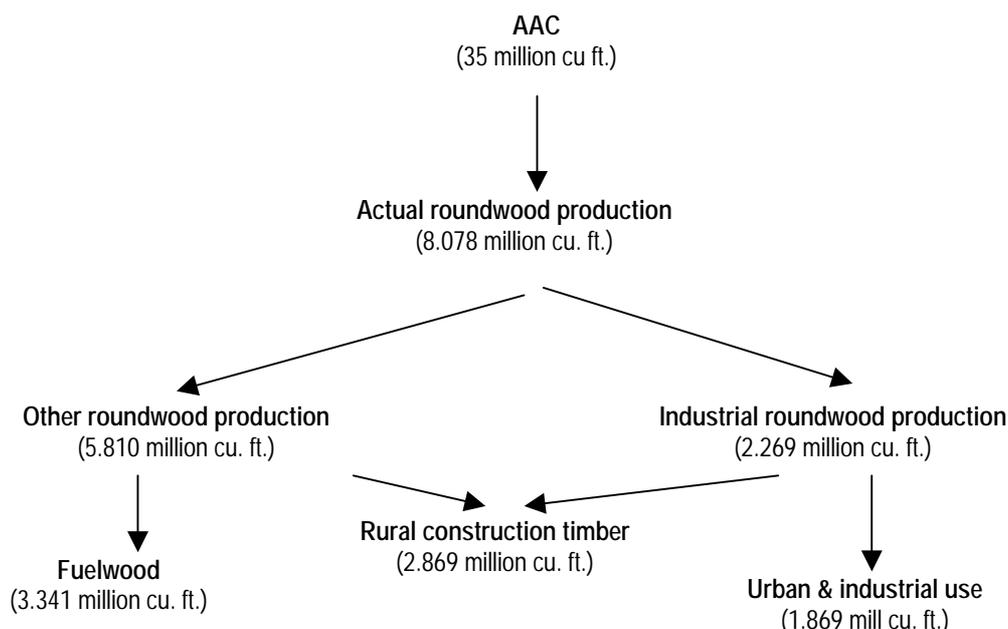
Total roundwood production in 1999 was about 7.2 million cu. ft. including fuelwood. Commercial roundwood production was 2.4 million cu. ft. and the balance of 4.8 million cu. ft. was produced through various territorial divisions to supply rural people with wood for house construction as well as fuelwood. In 2000, total roundwood production was 8.1 million cu. ft.. Production from FMUs amounted to 2.3 million cu. ft and the balance of 5.8 million cu. ft. (including fuelwood) was produced from forest areas presently outside the FMUs through various territorial divisions (Table 5).

**Table 5. National wood production (cu. ft.)**

<b>Wood production</b>	<b>1999</b>	<b>2000</b>
Industrial roundwood production	2 372 707	2 269 507
Other roundwood production	2 545 786	2 467 565
<b>Sub-Total</b>	<b>4 918 493</b>	<b>4 737 072</b>
Fuelwood production	2 267 300	3 340 712
<b>Total wood production</b>	<b>7 185 793</b>	<b>8 077 784</b>

Source: DoFS (1999; 2000) and FDCL (1999; 2000).

A small volume of subsidized roundwood, for rural people, also comes from Forestry Development Corporation Limited (FDCL) sources. The royalty paid is the rural rate of royalty. Roundwood production, consumption and the flow of timber for 2000 are given in Figure 1.



Source: FDCL (2000); DoFS (2000)

**Figure 1. Production and consumption of roundwood**

### Industrial roundwood

#### Production

The production of industrial roundwood in 1999 was about 4.9 million cu. ft. (excluding fuelwood); this declined slightly to 4.7 million cu. ft. in 2000 (Table 6). With the introduction of the Timber Marketing and Pricing Policy in January 1999, the production of timber was streamlined and only the recognized timber producing agency (FDCL) was allowed to harvest and market timber in the country (commercial production). The production of subsidized roundwood for rural people is approved by the Dzongkhag Administration in close collaboration with the territorial divisions of the DoFS.

The export of roundwood, sawntimber and fuelwood, in primary form, is banned (RGOB 1998a). To boost the production of timber, more FMUs need to be opened and operated. Forest workers need to be trained in tree-felling operations and extraction methods. Details of the production of industrial roundwood (excluding fuelwood) during 1999 and 2000 are given in Table 6.

**Table 6. Production of industrial roundwood**

Year	1999	2000
Volume in cu. ft. (log form)		
Industrial timber produced	2 372 707	2 269 507
Other roundwood produced	2 545 786	2 467 565
Total industrial wood production	4 918 493	4 737 072

Source: FDCL (2002); DoFS (2002)

#### Import, export and consumption

About 30 000 cu. ft of industrial timber were imported in 1999. Most of the timber came from India. In 2000, this dropped to about 2 436 cu. ft..

The volume of timber exported in 1999 was slightly more than 3.39 million cu. ft., dropping to approximately 1.81 million cu. ft. in 2000. With the promulgation of the export ban, 3.4 million cu. ft in 1999 and 1.8 million cu. ft. in 2000 were used by various domestic wood-based industries.

Timber consumption in 1999 was more than 5.1 million cu. ft.; in 2000 this declined to 4.275 million cu. ft (Table 7). In 1999, consumption exceeded production, which was reversed in 2000.

**Table 7. Volume of industrial timber consumed in-country.**

<b>Particulars</b>	<b>1999</b>	<b>2000</b>
Volume in cu. ft (log form)		
Roundwood consumed for rural and other uses	2 545 786	2 171 884
Timber consumed for industrial uses	2 530 400	2 104 052
<b>Total consumption</b>	<b>5 076 186</b>	<b>4 275 936</b>

Source: FDCL (2002); DoFS (2002)

### Sawnwood

The production of sawnwood in 1999 was 0.8 million cu. ft rising to 1.05 million cu. ft in 2000. During 1999, 122 001 cu. ft of sawnwood were imported; in 2000, imports of sawnwood declined to 79 094 cu.ft.

About 40 400 cu. ft of sawnwood were exported in 1999. In 2000, exports dropped to slightly more than 5 300 cu. ft. Increasing domestic demand is a possible reason.

In-country consumption of sawnwood in 1999 was about 120 000 cu. ft and around 178 000 cu. ft in 2000. Most of the timber was used for rural house construction, Dzong/monastery construction/repair and construction of other government facilities. Wood-based industries are required to obtain wood at open auctions. Sawnwood for urban consumption is obtained directly from sawmills, therefore the volume of consumption is much higher.

### Wood-based panels

There are very few enterprises that manufacture wood-based panels. The veneer sheets that are produced are used for manufacturing plywood and blockboards. Considerable quantities of wood-based panels are imported from India. Production details are given in Table 8.

**Table 8. Production of wood-based panels**

	<b>1999</b>	<b>2000</b>
Volume in cu. ft.		
Veneer	1 678 871	573 410
Plywood	105 194	131 978
Particle board	356 172	409 610

Imports of veneer in 1999 were about 4.8 million cu. ft. and in 2000 they rose to 5.8 million cu. ft. In 1999, plywood imports amounted to 5.6 million cu. ft.; in 2000, they shot up to 30 million cu. ft. Imports of particleboard also increased from 2 330 cu. ft. to more than 4 800 cu. ft. (Table 9).

**Table 9. Imports of veneer, plywood and particle board**

	1999	2000
	Volume in cu. ft..	
Veneer	4 771 087	5 759 449
Plywood	5 570 647	30 890 918
Particle board	2 330	4 837
Fibreboard	1 483	282

Source: DR&C 2002

Exports of veneer in 2000 decreased compared to 1999. Similarly plywood exports declined from 27.6 million to 12.6 million cu. ft. (Table 10).

**Table 10. Exports of veneer, plywood and particle board**

	1999	2000
	Volume in cu. ft	
Veneer	6 361 803	249 359
Plywood	27 627 321	12 658 529
Particleboard	340 035	30 932

Source: DR&C 2002

## Current and emerging issues, trends and critical problems

### ***Sustainable forest management***

#### Demand for timber and fuelwood

The quantity of timber consumed domestically currently remains within reasonable limits. In 1999, the total volume supplied was 5.1 million cu. ft. dropping to 4.3 million cu. ft. in 2000. Future demand is likely to exceed the sustainable production levels. This will exert pressure to produce more timber to cater to the needs of the rural population and wood-based industries.

The demand for fuelwood is also increasing steadily. In 1999, about 2.3 million cu. ft of fuelwood was supplied by various territorial divisions and in 2000 this rose to 3.3 million cu. ft<sup>1</sup>. The demand for fuelwood is also likely to increase, which exerts pressure on the forests.

At the national level, fuelwood production potential and extraction is not a major problem. However, at the local level, extraction of fuelwood and the sustainable management of forests for fuelwood supply is a critical problem because of the concentration of human settlements in valleys and other favourable locations. This situation imposes extra stress on forests near settlements. It leads to forest fragmentation and degradation (Dhital 2001).

#### Forest fires

Forest fire is a major problem for the sustainable management of forests. During the dry season when fires occur, especially in pine forests, large tracts of forest burn causing considerable financial losses.

Blue pine stands that grow in drier zones suffer the greatest damage but affected areas regenerate with young seedlings over time. In the mixed conifer zone, the main species are fir (*Abies densa*), hemlock (*Tsuga dumosa*) and spruce (*Picea spinulosa*). These species usually prefer moist sites and suffer the least. However, they burn badly during prolonged dry spells.

The broadleaf forests, both temperate and subtropical, are highly variable. Stands on moist sites are not affected while stands in drier areas are prone to forest fires.

<sup>1</sup> The figures do not account for the fuelwood collected by rural people for home consumption. MOA (2001) estimates the per capita consumption of firewood to be around 1.04 m<sup>3</sup> (2002 estimate).

The main causes of forest fires include (Mckinnel 2000):

- Burning cinders from shifting cultivation activities;
- Lemon-grass harvesters;
- Cattle herders, both migratory and sedentary;
- Travellers (mainly spent cigarettes thrown from vehicles);
- Children playing with matches;
- Road workers (from fires used to melt bitumen);
- Campfires and fires as heat sources;
- Fires set deliberately by villagers to scare away wild animals or to fell trees for timber and fuelwood.

According to Mckinnel (2000), the causes of 77 percent of forest fires are unknown; 10 percent are caused by shifting cultivation activities, 6 percent originate from burning to promote grazing value, 5 percent from orchard-related burning and 1 percent are caused by children.

### Grazing by domestic cattle

Local people who own cattle have grazing grounds in the forest (*tsamdogs*) registered in their names. The cattle remain in one particular *tsamdog* up to several months. When the fodder situation in the *tsamdog* deteriorates, the animals are moved to another location. Cattle grazing affects the regeneration of main tree species. Grazing cattle also loosen the topsoil, which exacerbates soil erosion in the mountains and contributes to forest degradation.

In the conifer forests at high altitudes this is an even greater problem. Efforts are being made to resettle pastoralists. It has been observed that the children of pastoralists have started going to schools and this trend might reduce cattle grazing in forests. The young generation has also started to leave traditional professions in search of better income-earning opportunities in new locations.

According to the Forest and Nature Conservation Rules (2000)<sup>2</sup> cattle grazing in government reserved forests is allowed. However, the following conditions are to be complied with as and when necessary:

- (i) The Forest Department can stop cattle grazing in some specified location for a specified period;
- (ii) Grazing can also be restricted in an area that is fenced for natural regeneration or in plantations for a given period of time.

Unfortunately, the enforcement of the provisions has not been very effective.

Since 1992, the cattle population has declined (310 000 head in 1992 compared to 400 000 head in 1990); this may be attributable to the introduction of improved breeds or may be a result of exceeding the carrying capacity of the shrinking grazing resources (Dorji 1993; Tsuchida 1987; Numata 1987, quoted in Davidson 2000).

The following emerging issues are likely to affect sustainable forest management in the future.

### Land-use changes

Due to the strong conservation policies, no drastic land-use change has occurred during the last plan period and none is foreseen in the near future. Land-use change may take place in the process of discontinuing the practice of *tseree* (shifting cultivation). Some *tseree* land will revert back to the government reserve forests and affected people will receive compensation. Most land under *tseree* is unsuitable for conversion to permanent cultivation, and the DoFS in coordination with

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<sup>2</sup> Section 72 of the Forest and Nature Conservation Rules (2000).

the Home Ministry and the Dzongkhag Administration and other relevant agencies plays a vital role in finding viable alternative forestry schemes to replace *tseree*.

As more and more agricultural land is used for roads, housing, waste disposal, sewage systems, power plants and transmission lines, there will be pressure to convert forestland to agriculture or other purposes. Adequate measures need to be devised to control forest conversion (RGOB 1998b).

### Logging practices

Traditionally, trees were felled, bucked and transported to the road manually. The downhill rolling of logs created long and continuous rills along steep hill slopes. Chainsaws were introduced only later and have improved the efficiency of log recovery.

After nationalizing logging operations in 1979, forest management practices have moved steadily towards more sustainable management. Detailed forest inventories are made, and better planning and more environmentally sound harvesting and road construction methods have been introduced.

Currently, all commercial harvesting is conducted using the cable logging system. Fixed skylines were first introduced in the early 1970s. Gradually other equipment like skidders, mini-tower yarders and hydraulic log loaders were introduced. The long distance cable logging system is the most suitable option for commercial timber harvesting in Bhutan. At the landing, logs are loaded either manually or with the help of a hydraulic log loader and transported by trucks. This hydraulic log loader has improved efficiency and helped to reduce soil erosion.

Forest road construction in the mountains probably had the greatest environmental impact in the past as the roads were constructed entirely by manual labour. Later, road construction was mechanized with the introduction of small crawler tractors (e.g. the D-6). With the introduction of these machines, accessibility to the FMUs increased. Soil disturbance by crawler tractors in the mountain ecosystem was quite high, with sedimentation rates in small streams increasing tremendously. Very recently, steps have been taken to reduce the negative impacts of forest road construction by introducing hydraulic excavators. The present logging system adopted by the FDCL is adequate and environmentally sound, and should be continued. Any deviation would cause environmental problems.

### Pollution

Section 73 of the Forest and Nature Conservation Rules (2000) empowers the DoFS to adopt necessary regulations for the protection of soil and water and the prevention, minimization or remediation of erosion, and soil and water pollution and contamination. Fortunately, such hazards have not been observed yet. However, in the future, the possibility of acid rain and damage to large areas of forests and aquatic habitats cannot be ruled out.

### ***Main implications from international conventions***

The main implications emanating from international and regional conventions are the difficulties in meeting their requirements either in part or in whole. The reasons are (i) lack of funds, (ii) lack of skilled human resources, and (iii) lack or poor information. In addition, the coordination among and integration of institutions to work towards the objectives of international conventions is often weak.

Commitment to international agreements, principles and standards is costly. The benefits of environmental conservation transcend national boundaries, but impose great opportunity costs that are neither shared nor accorded due recognition or compensation. However, Bhutan has made modest progress in the implementation of Agenda 21 and other outcomes of the Rio Summit. Sustainable development is the guiding principle of Bhutan's development strategy.

As stated in Agenda 21, countries have an important role to play in the follow up to the United Nations Conference on Environment and Development (UNCED) and the implementation of Agenda 21. National-level efforts had to be undertaken to ensure that all important issues are

addressed, both for the environment and development, in a coherent manner. The program for the implementation of Agenda 21 established the target year of 2002 for all countries to formulate a national sustainable development strategy. Bhutan has prepared such a strategy – The Middle Path.

Bhutan has used the combination of the sustainable development strategy and the five-year plan as development sector plans. The sectoral plans facilitate the allocation of financial resources for development activities. They have also helped to measure progress towards the sustainable development of goals and targets.

There have also been significant legal and international organizational changes since 1992 as a result of meeting the goals of Agenda 21 and other UNCED outcomes (e.g. Convention on Biological Diversity [CBD], the United Nations Framework Convention on Climate Change [UNFCCC] and Convention on International Trade in Endangered Species of Wild Fauna and Flora [CITES]).

Bhutan signed the CBD in 1992 and ratified the convention in 1995. The Bio-diversity Action Plan was a requirement for fulfilling the obligations of this convention. In Bhutan, the Plan was prepared in 1998 and the document was revised in 2001. The Statement for the conservation of Bhutan's rich biodiversity was incorporated in the National Forest Policy. Bhutan has participated actively at the South Asian Association for the Regional Co-operation (SAARC) Environment Minister's Forum and other bilateral fora.

Bhutan signed the UNFCCC in 1992 and ratified the convention on 25 August 1995. A greenhouse gas (GHG) inventory for Bhutan was carried out and a report has been prepared for discussion.

Bhutan continues to support sustainable development policies and international agreements. The complexity of international binding and non-binding instruments addressing environmental issues requires integrated approaches in policy formulation and implementation at both national and international levels.

## **Current national forest policies**

### ***National statements or objectives related to forests***

#### **Bhutan Forest Act (1969)**

This is the first legal framework for regulating forest resources in the country. The document consolidated numerous directives relating to forest rights, forest uses and forest product royalties.

#### **Forest Policy (1974)**

The 1974 policy pays particular attention to conservation. The policy's main objective is to maintain at least 60 percent of the land area under forest cover. It also emphasizes the elimination of shifting cultivation to prevent forest degradation and to maintain soil fertility. Watershed management and the restoration of denuded and barren hills are accorded high priority.

#### **National Forest Policy (1991)**

The National Forest Policy is still at the draft stage and has not yet been passed by the National Assembly. There are four guiding statements (Appendix 1). The purpose of the policy statements is to ensure that forest resources are used according to sustainability principles, contributing to social justice and equity. The policy aims to ensure the conservation of the environment, and only thereafter aims at derivation of economic benefits from the forest as a rationally managed resource. The policy statements are given below, in order of priority.

1. Protection of the land, its forest, soil, water resources and biodiversity against degradation, such as loss of soil fertility, soil erosion, landslides, floods and other ecological devastation

and the improvement of all the degraded forest areas, through proper management systems and practices.

2. Contribution to the production of food, water, energy and other commodities by effectively coordinating the interaction between forestry and farming systems.
3. Meeting the long-term needs of the Bhutanese people for wood and other forest products by placing all of the country's production forest resources under sustainable management.
4. Contribution to the growth of national and local economies, including exploitation of export opportunities, through fully developed forest-based industries, and to contribute to balanced human resources development, through training and creation of employment opportunities.

The main thrust of this National Forest Policy is to bring the government reserved forest under effective and scientifically prepared forest management plans. The commercial harvesting of any forest product requires approved forest management plans.

The specific policy objectives are:

- Conservation of the environment and its biodiversity;
- Sustainable management of forest resources;
- Promotion of people's participation in the management of forest resources through social and community forestry;
- Promotion of wood-based industries to generate employment opportunities and revenue;
- Protection and rehabilitation of watersheds for drinking and irrigation water and also for enhancing the potential of hydropower generation; and
- Development of human resources through higher education and training.

### Forest and Nature Conservation Act (1995)

With the enactment of the Forest and Nature Conservation Act (1995), the Bhutan Forest Act (1969) was repealed. Through this act, community-based natural resource management and utilization were encouraged. Community and private forestry are encouraged by devolving power<sup>3</sup> to communities and private individuals.

Timber trade and harvesting have been defined and systematic modalities have been developed for each activity. The roles and responsibilities of the FDCL and the DoFS have been delineated clearly.

Penalties are well defined as a deterrent for those who violate laws relating to forest product utilization.

The Forest and Nature Conservation Rules (2000) were enacted to implement the provisions of the Forest and Nature Conservation Act (1995) in a more efficient and transparent manner.

### Timber Marketing and Pricing Policy (1999)

According to the provisions of the Forest and Nature Conservation Act (1995), commercial production of timber is to be undertaken by the recognized agencies<sup>4</sup> of the Ministry of Agriculture only, based on approved forest management plans. The sale and use of timber are to be conducted according to the provisions mentioned in the policy (see Appendix 2).

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<sup>3</sup> Section 16(a) of the Forest and Nature Conservation Act-1995 states "The Ministry may issue Social Forestry Rules to encourage any person to grow or nurture forest crops on his own registered private land, excluding *tsamdog* and *sokshing*".

<sup>4</sup> Currently only the Forestry Development Corporation Limited.

### Vision statement for the forestry sub-sector

Consistent with the guidelines of Bhutan 2020 the MOA has drafted the following vision statement for the forestry sub-sector:

“To bring about increased benefits from natural resources for the rural people, particularly the poorest of the poor, through empowerment, control of natural resources and appropriate incentives, and economic and environmental services for all sections of the society through a managed and viable system of sustainable use, increased productivity and improved conservation of natural resources”.

### ***Specific forestry policies and thrust areas***

#### Forest resources and land-use change

The National Forest Policy of 1974 states that “the allotment of forest for agricultural and horticultural cultivation and for various other purposes will not be done without the concurrence of the Forest Department”. This is necessary to control forest conversion and to ensure that only those lands that are absolutely necessary and suitable are released for other purposes. The policy advises that scattered forest habitation should be discouraged and people should be allowed to settle in other localities. The land swapping policy implemented by the Ministry of Agriculture in collaboration with the Ministry of Home Affairs and the Dzongkhag Administration addresses this issue.

#### Forest management including timber harvesting

The policy stresses that “the harvesting of all forest products will be done in such a way that unnecessary losses are avoided and the productivity of the forests is maintained”.

Forest management plans are required for all production forest areas before any types of commercial harvesting can take place. Adequate provisions are made in the Forest and Nature Conservation Rules on forest management and timber harvesting (see Appendix 4). The forest management plans also stress the environmentally sound construction of roads and logging practices that minimize land and forest degradation.

#### Forest and biodiversity conservation

Owing to the tremendous variations in the terrain conditions a wide range of unique ecosystems has evolved. Bhutan’s forests contain many valuable coniferous and broadleaf timber species. Over 300 species, largely alpine plants, are used in traditional medicine. Grierson and Long (1983) listed 1 688 species of horticultural plants that have been introduced to Europe from Bhutan. The Bhutanese flora also contain many wild relatives of agricultural species such as strawberry, carrot, cherry, *Rubus* and raspberry. A variety of mushrooms and food plants supplement and enrich the household diet.

Bhutan has opted to pursue a cautious and environmentally sound approach to development. Forest policy recognizes the use of resources according to the principle of sustainability. In relation to the conservation of biodiversity, the following actions are important (RGOB 2002a):

- Notified nine Protected Areas representative of Bhutan’s diverse ecosystems comprising 26 percent of the country’s land area;
- Declared an additional nine percent of the total area as biological corridors connecting all Protected Areas;
- Pledged to maintain 60 percent of Bhutan’s land area under permanent forest cover;
- Adequate provisions are included for establishing Protected Areas and conservation regulations in the Forest and Nature Conservation Act (1995);
- Passed the Forest and Nature Conservation Rules (2000) for effective implementation of the provisions of the Forest and Nature Conservation Act (1995);

- Established a biodiversity management board as the policy-making body on biodiversity related matters;
- Established the Bhutan Trust Fund for Environmental Conservation to provide long-term funding for conservation-related activities;
- Formulated and passed the Bio-diversity Action Plan for Bhutan; and
- Established the National Bio-diversity Center under the Ministry of Agriculture to oversee, coordinate and implement biodiversity-related activities.

Provisions are also made in the National Forest Policy of 1991, which advises “to assure successful conservation of forest ecosystems, their genetic resources and biodiversity, a properly documented management plan will be prepared and implemented for all areas, taking into account the specific requirements of each location”.

### Forest industries

The National Forest Policy of 1991 supports creating a favourable environment for the development of forest-based industries for domestic and export markets (RGOB 1998).

### Non-wood forest products

The National Forest Policy of Bhutan (1991) recognizes the importance of NWFPs and adequate provisions are made in the Forest and Nature Conservation Rules (2000) (Appendix 4) for their sustainable utilization. The policy states that “Multiple uses of the forests including livestock grazing, production of fodder, firewood, and non-wood forest products, will be monitored and controlled in order to maximize their contribution to local economies, to meet the basic needs of the people in a sustainable way and at the same time to minimize the harmful effects due to indiscriminate use” (RGOB 1991). The policy also empowers the drafting of provisions to monitor utilization.

### Trees outside forests

Trees that grow outside the government reserve forest are either community or privately owned. Therefore, the rules on community or private forestry are applicable for these trees. Trees found growing in the government reserve forest<sup>5</sup> belong to the state. The registration of trees growing on private property has not been completed yet.<sup>6</sup>

### Wood energy

The demand for wood and wood products in terms of volume is dominated by fuelwood. Demand for fuelwood is expected to increase in the future. Although the overall supply-demand situation is positive, shortages occur in some urban areas. Efforts are being made to explore alternative sources of energy for cooking and space heating during the winter months. The government has waived the duty imposed for importing electric household appliances to encourage their use. This policy has reduced fuelwood consumption especially in the urban centres.

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<sup>5</sup> The government reserved forest has been defined as “any land or water body, whether or not under vegetative cover, to which no person has acquired a permanent transferable right of use and occupancy, regardless of whether such land is located within or outside the forest boundary pillars, and includes land registered in a person’s name as tsamdog (grazing land) or sokshing (woodland for collection of leaf litter).”

<sup>6</sup> Appendix 3 provides details of the procedure for registration.

### Investment in forestry and wood processing

The Forest Policy supports appropriate home and cottage industries and further processing of to add value to primary forest products. The policy intends to support industrialization and to improve the standard of living of people, particularly in the rural areas.

- The business conditions for the private sector wood industry are favourable compared to many other developing nations.
- Capital can be loaned from four major financial institutions at interest rates of 13 to 15 percent *per annum*. The government also offers a special business-planning course of five weeks, which further enhances receiving favourable loan conditions. The government supports the private sector in long-term human resource development at technician and professional levels.
- The sales tax of about 10 percent is reasonable and so are corporate taxes.
- Machines and spare parts can be imported duty free.
- Electricity is available in all major towns at reasonable costs. Hydropower is the major foreign exchange earner and its development and generation are high government priorities.

### People's participation in forest management

Participatory approaches to in forest management have been evolving gradually since the first Royal Decree on social forestry in 1979. Until recently, participation has been viewed primarily as a feature of community, private and school social forestry<sup>7</sup> and protected area networks. Now it is recognized that participatory forest management should be a broad development strategy that can take diverse forms<sup>8</sup>.

The priority of the Ninth Five-year Plan is to utilize forestry extension methods to determine what form of greater participation can take place in the FMUs and areas presently outside the FMU system. This is likely to bring about a major change in forest management (RGOB 2002b). The Forest Resources Development Division of the DoFS is expected to address the issue of people's participation in FMUs and will be responsible for exploring greater people's participation in the management of forest areas presently outside the FMUs (RGOB 2002b). The document also covers people's participation in protected area management.

The Bhutan 2020 document covers decentralization and devolution of forest management responsibility. Decentralization started with the initiation of block development committees or *geog yargay tshogchung* (GYT) in 1991. Today the decentralization of responsibilities extends up to *geog* (block) levels, which have their own elected representatives (RGOB 1999). The geogs have prepared their development plans for the Ninth Plan period. Almost all geogs include decentralized forestry activities<sup>9</sup> such as the creation of community and private forests. Successful decentralization of forestry functions and full implementation of geog plans will require considerable strengthening of the institutional capacity of the DoFS at all levels (RGOB 2002b).

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<sup>7</sup> By royal command in January 1979, a social forestry scheme was launched involving local people in tree planting on their private or community land. The DoFS took the lead role by distributing seedlings to every household for planting on privately registered land and to a lesser extent on communal land. In 1985, 2 June (Coronation Day) was declared as a school social forestry day, involving school children in forestry activities and entrusting them with the management and protection of forests.

<sup>8</sup> The Forest and Nature Conservation Act of 1995 envisages three branches of forest management, i.e. social forestry, production forestry and protected area management. Local interests are catered for by social forestry, including community and private forestry (to some extent by the FMU system) and the FMU system caters for industry, watersheds and to some extent revenue generation.

<sup>9</sup> The following activities are decentralized: (i) community forestry, (ii) private forestry, (iii) fire management, (iv) *tsamdog* and *sokshing* management, (v) dry fuelwood allocation, (vi) afforestation activities and (vii) rural timber supply.

## Forestry research, education and extension

Insufficient or poor information and inadequate human and capital resources are constraining decision-making in forestry (RGOB 1991). Presently the forestry research program is supported by Helvetas of Switzerland. Twinning arrangements have been made with BOKU Vienna (Austria) especially for the conifer management research program and for the training of professionals.

Two Bhutanese institutes provide training in forestry at the three-year diploma level and the forest guard level. Professional-level training is conducted outside the country.

The National Forest Policy of 1974 recognizes the importance of research and development. It states that utilization programs should keep abreast with the latest developments in technology. The development of research centres is emphasized. Participatory research is encouraged to benefit both forest management and the people (RGOB 1974). Forestry research in Bhutan is still in its infancy and efforts need to concentrate more on applied research (RGOB 1991) until adequate human resources, capable of handling basic research, are built.

There are four forestry research centres that conduct research on forestry, livestock, agricultural and horticultural development in Bhutan. Forest product utilization research is embryonic. Research on forest product statistics has not been included in the Ninth Plan. The forestry research programs for the Ninth Plan have nine sub-programs:

- Strengthen forestry research organization and management;
- Broadleaf forest management;
- Coniferous forest management;
- Reforestation and industrial plantation;
- Social forestry;
- Non-wood forest products (NWFPs);
- Wood products;
- Nature conservation; and
- Forest protection.

## Forest fires

Burning in government reserve forests, which might damage, destroy or endanger trees, wild plants and animals is prohibited by the Forest and Nature Conservation Rules, 2000<sup>10</sup>. The rules prescribe imprisonment of up to five years or a fine of not more than Nu.1 000/acre for directly or indirectly causing a forest fire (RGOB 2000a)<sup>11</sup>.

The Ninth Plan includes specific provisions related to forest fire management, forest fire prevention and control, and training on fire suppression for Dzongkhag forestry staff and farmers. A forest fire publicity campaign is planned and fire-fighting equipment will be procured (RGOB 2002b).

## Forest plantations

The National Forest Policy of 1991 has provisions for replanting of denuded and degraded forestlands. The Ninth Plan recognizes that afforestation and reforestation programs are crucial for improving forest conditions and involving the local people in forestry development. This is the preferred approach where local people want to establish plantations on degraded lands and all the criteria are met (RGOB, 2002b). Key activities include:

- Updating guidelines for afforestation, including norms, standards and participation;
- Providing support in the preparation of simple management plans;

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<sup>10</sup> Section 22 (1c) of Forest and Nature Conservation Rules, 2000 (Vol. I).

<sup>11</sup> Section 84 (8g) of Forest and Nature Conservation Rules, 2000 (Vol. I).

- Strengthening practical monitoring and evaluation systems for afforestation and reforestation;
- Supporting the territorial divisions in the preparation of simple management plans for plantations on leased forest areas; and
- Supporting territorial divisions in preparing guidelines for identifying sites for natural regeneration.

The policy environment is supportive for creating plantations on degraded land during the Ninth Plan period.

### Watershed management

Effective watershed management is a key component of sustainable national development. The National Forest Policy of 1991 states “Special management rules will be defined to protect critical watersheds from irreversible changes in their flora, fauna and ecology. These rules will also cover priority watersheds, where management rules will focus on avoiding harmful effects to the people and system downstream”.

There are five main watersheds in the country; it is realized that policies for watershed management impact other sectors (e.g. hydropower development, livestock development, settlements and timber harvesting) (RGOB 1999). Bhutan 2020 stresses that effective watershed management ensures the conservation of biodiversity, soil fertility and enhances the biological productivity of natural systems. The preparation of management plans for all the watersheds has been accorded high government priority so that all development programs can be implemented without compromising environmental integrity (RGOB 1999).

### ***Policy instruments of specific forest policies and implementation processes***

#### Forest and Nature Conservation Rules, 2000 (Volumes I & II)

Forest and Nature Conservation Rules (2000) have been formulated for the effective implementation of the Forest and Nature Conservation Act of 1995.<sup>12</sup>

#### Master Plan for Forestry Development (1991)

The Master Plan for Forestry Development (MPFD) was prepared through technical assistance from the Asian Development Bank and the Finnish Department of International Development Co-operation (FINNIDA). The main objectives of the Plan are:

- Assessment of the pressure on watersheds, indicating critical watershed areas for rehabilitation and priorities for watershed management;
- Halting degradation of forests and promoting reforestation of all degraded forest areas;
- Improvement of low density forest areas through silvicultural operations;
- Protection of forests from degradation owing to population pressure, uncontrolled grazing or unscientific utilization of forest resources;
- Preparation of management plans for all forest areas and protected areas and including all the areas for better management;
- Promotion of social forestry to increase people’s participation in forest management;
- Satisfying local needs for wood and wood products and assuring raw materials for industry on a sustainable basis.

The Master Plan has set the direction for future forestry development. The development of wood-based industries has been emphasized in detail. Assessment of potential forest resources, NWFPs, nature conservation and park management, research and wood utilization are examined carefully.

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<sup>12</sup> The important provisions of these rules are provided in Appendix 4.

### Ninth Five-year Plan (2002)

Based on the review of key national policies that affect forestry, the current situation and the lessons learned from the Eighth Plan period, a set of priorities for the forestry sector during the Ninth Plan has been developed (RGOB 2002b).

#### Priorities for the Ninth Plan

The priorities for the forestry sector have been separated into:

(i) new priorities:

- Encourage sustainable management of forests by local communities, through private and community forestry and also through greater involvement in the management of FMUs and other national forests;
- Strengthen the capability of Dzongkhag extension staff to implement decentralized forestry activities;
- Increase the sustainable utilization of forest resources, including NWFPs, to generate employment and income while at the same time maintaining the condition of the forests; and
- Create an appropriate policy and legal environment for the development of wood-based industries.

(ii) and ongoing priorities:

- Strengthen the network of national parks and protected areas in order to conserve the unique biodiversity of the country for the benefit of future generations of Bhutanese citizens and the world community;
- Protect and rehabilitate watersheds for the production of quality water for drinking, irrigation and for the production of hydro-electric power; and
- Conduct forestry research to ensure that national and private forests are managed according to scientific principles.

### ***Non-forestry policies affecting the management of forests and trees***

The non-forestry policies that have a bearing on the sustainable management of forests and trees are given below. Some important topics are discussed in detail under relevant acts and policies.

#### The Middle Path (1998)

The Middle Path, formulated in 1998, constitutes a National Environment Strategy (NES) for Bhutan. The NES envisages three avenues for sustainable economic development: (i) expanding hydropower; (ii) increasing agricultural self-sufficiency; and (iii) expanding the industrial base (RGOB 1998). The NES does not include a specific focus on forestry development, although the importance of mitigating watershed degradation to secure hydro-electric potential is stressed.

By the end of 1996, only two percent of the country's estimated hydropower potential was being tapped (RGOB 1996). Expanding this sector will improve living conditions and reduce the high level of domestic fuelwood consumption (RGOB 1998).

More than 85 percent of the nation's population is engaged in agriculture and relies on integrated systems of crops, livestock and small-scale forest management (RGOB 1998). Reaching agricultural self-sufficiency is constrained by the limited amount of arable land, the nature of the terrain and the high population growth rate of 2.55 percent (DoHS 2000).

Industrial development is based on four main resources: (i) hydropower, (ii) wood, (iii) agriculture and (iv) minerals. Constraints to industrial development include land use, topography, transport and communication facilities and limited access to raw materials (RGOB 1998).

## Agriculture, infrastructure development and other land uses

About seven percent of the total land area is classified as arable agricultural land (LUPP 1995); however, with the growing population, the potential for encroachment on forestland is very high. Mining, especially in the forests or in their vicinity, is likely to pollute river systems. The expansion and improvement of Bhutan's road network and construction activities, required under the development plan, are important to all three avenues of development. According to the Environment Assessment Act (2000) an environmental impact assessment (EIA) is mandatory for development projects.

## Environment

The National Environment Commission is responsible for preparing the national strategy to ensure that environmental concerns are integrated in the development agenda. The NES was passed in 1998 and the main objective is to minimize or mitigate the impacts that are likely to result from the development (RGOB 1998b).

## Industrial development

Bhutan has limited mineral resources and agricultural potential. Therefore it has become important to devise alternative ways to generate revenue. The objectives of industrial development in Bhutan are:

- Expanding productivity in the industrial sector to finance increasing public expenditure; and
- Diversifying and increasing employment opportunities for the rapidly expanding population (RGOB 1998b).

Industrial activities are classified broadly into four categories: (i) forest or wood-based, agro-based, mineral-based and service-based industries. Currently, the most important are the forest-based, mineral-based and service-based industries. To facilitate industrial development, the government has privatized many manufacturing companies and service industries (RGOB 1998b). There is good potential for further developing agro-based industries due to the availability of high-quality tropical and temperate fruits, for which there is a huge market in India and other countries (RGOB 1998b).

Industrial development is constrained by the supply of and access to raw materials. Future industrial development will have to depend on harnessing hydropower either by itself or in conjunction with accessible mineral resources.

There is a suitable policy environment for the private sectors to establish wood-based enterprises in the country. Based on the analysis of present and future raw material availability, and the demand for and supply of timber, an environmentally sustainable and economically viable forest-based industry should be encouraged. In January 1999, the Timber Marketing and Pricing Policy was introduced. The long-term objectives of the policy are favourable for the establishment of wood- and forest-based industries (RGOB 1998). The long-term objectives of the policy are provided in Appendix 2.

## Tourism

Bhutan has become an increasingly popular destination for international tourists because of the beautiful and pristine Himalayan setting. The overall objective of tourism is to maximize foreign exchange earnings while minimizing the adverse cultural and environmental consequences (RGOB 1998b). The unrestricted flow of tourists is discouraged. (RGOB 1998b).

The government monitors the flow of tourists to preserve the higher elevations (RGOB 1998b). The mountain systems are very fragile and impacts are difficult to mitigate. Therefore, maintaining their integrity requires diligence and protection. Human impacts need to be kept well below the maximum level of acceptability. The most pressing tourist-related problems are:

- Destruction of vegetation through the cutting of slow-growing trees for fuelwood;
- Destruction of delicate vegetation;
- Indiscriminate disposal of non-biodegradable waste; and
- Switching from sustainable cropping patterns to unsustainable but highly profitable patterns to meet the needs of affluent tourists (RGOB 1998b).

To reduce these impacts, the government has drawn up guidelines for promoting environmentally sound tourism (RGOB 1998b). The most important are:

- Substitution of kerosene and liquid petroleum gas (LPG) for fuelwood;
- Construction of permanent campsites, rest houses and toilet facilities along the established trekking routes;
- Complete retrieval of non-biodegradable waste; and
- Strict limits on washing and other activities that pollute the environment.

Tourism also contributes to the erosion of traditional values and can impose unnecessary pressure on local people, especially in rural areas. Through its guidelines, the government is trying to promote environmentally sound and socially acceptable tourism. Tour guides are trained so that they can influence, regulate and correct tourist behaviour (RGOB 1998b).

## Employment

One of the priorities identified in the Ninth Plan is to increase the sustainable utilization of forest resources including NWFPs to generate employment and income. However, the environmental integrity of the forest has to be maintained.

## Trade

According to the provisions of the Timber Pricing and Marketing Policy, the export of primary timber and fuelwood is banned. The policy encourages the private sector to add value to primary products. Processed products can be exported as finished goods. The major export market is India, but wood products are also exported to other countries.

## Renewable Natural Resources (RNR) sector goals (2001)

The RNR sector has identified four goals for the Ninth Plan. As forestry is the largest sub-sector it is expected to contribute significantly. The four goals for the RNR sector are:

- (i) Enhancement of household and national food security;
- (ii) Conservation and management of natural resources;
- (iii) Enhancement of rural income; and
- (iv) Generation of employment opportunities.

## Bhutan 2020 (1999)

Bhutan 2020 provides clear guidance on the direction of the development path until 2020. Five development themes are identified:

- Human development;
- Culture and heritage;
- Balanced and equitable socio-economic development;
- Governance; and
- Environmentally sustainable development.

The long-term implications for forestry (Bhutan 2020) are profound, particularly those relating to governance and the relationship of the DoFS' resource management system with local people. Bhutan 2020 clearly outlines and envisions a gradual shift in the development towards people-oriented programs. The most important elements are:

- New partnership: the government no longer takes sole responsibility for development;
- Redefinition of the government's role from a provider to an enabler of development;
- Decentralization: enhancing opportunities for local decision-making;
- Broad-based development: the creation of new sources of employment and wealth generation;
- Equitable development: special measures to support disadvantaged groups; and
- Environmental sustainable development: maintenance of environmental integrity (MOA 2002).

### Land Act, 1979 (Volume KA)

The Land Act (1979) deals with the tenurial rights of agricultural land, provides legitimacy for the inheritance of land and protects property rights. Registration or recording of land with the government acknowledges the rights of an individual (farmer) to land, which she/he has cultivated traditionally. This led to the conversion of tax in kind to cash (Appendix 5).

### Environment Assessment Act (2000)

The act's objective is to ensure that socio-economic development is consistent with the "middle path" of sustainable development. It outlines the need for environmental clearance<sup>13</sup> and an EIA. The act also elaborates on the EIA process. The competent authority for issuing environmental clearance for various categories of projects, and the functions and power of various organizations are addressed. Monitoring and control for all the projects that are implemented, and offenses and penalties are identified by the act. In forestry, an EIA is a prerequisite for commercial timber harvesting and the construction of forest roads in the FMUs.

### Livestock Act (1980)

The main purpose of this act is to protect livestock from diseases and to develop and improve their hygienic utilization. The emphasis is on the administrative control of the movement of domestic animals during epidemics. The Livestock Act does not deal with issues related to forest resources and pastures. However, the Land Act grants rights to the pasture owners and does not impose any restrictions on cattle grazing in the forests as long as the pasture owner is consulted.

## **Process, mechanisms of and institutional arrangements for forest policy formulation**

The MOA has the overall responsibility for policy matters relating to the sub-sectors under its jurisdiction. Based on broad policy directions from the government, the MOA issues specific directives to each sub-sector whenever policies, acts or rules are to be formulated or amended. The Policy and Planning Division (PPD) under the MOA, is responsible for providing expert services for the preparation or amendments of forest policy. Usually a task force comprising officials from technical divisions of the DoFS and officials from other relevant organizations collaborate to complete the draft.

Wide consultations are held with other stakeholders including Dzongkhag officials, representatives from the private sector, officials from field units, *Gups* and other village elders. Their concerns and suggestions are taken into consideration. Comments and suggestions are also

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<sup>13</sup> "The requirement of an environmental clearance shall be pre-requisite to the issuance of a development consent".

invited from the GYT<sup>14</sup> and the *Dzongkhag Yargay Tshogdu*<sup>15</sup> (DYT). After incorporating this input, the draft document is submitted to the PPD of the MOA for consideration.

The DoFS as the technical agency responsible for forestry is the lead agency for proceeding with all matters relating to forest policy under the overall guidance of the MOA. Policies are discussed in the Policy and Planning Committee (PPC) whose members include all the heads of departments. After endorsement by the PPC, the draft document is submitted to the National Assembly for debate and endorsement.

The National Assembly is the apex political body responsible for all national aspects of governance. The National Assembly includes elected members, government officials and representatives of the monk body. Policy matters of national significance are processed through the National Assembly.

Adequate capacity exists for policy formulation. However, currently policy implementation is constrained by the shortage of trained people. Recently, the MOA has developed a comprehensive monitoring and evaluation (M&E) system. With its implementation, monitoring and evaluation of programs, sub-programs and activities at various levels of the MOA including the departments will be in place. The information will be transmitted electronically and fed into the national database system. Individuals and organizations interested in forestry will be able to access the data at different levels (i.e. the Dzongkhag level or national level).

## **Forest policy implementation and impacts**

### ***Institutional arrangements***

The MOA is responsible for the implementation of forest policy. It has the normative role in all questions related to forestry administration and forest management. The DoFS implements the various aspects of the policy. The DoFS has eight functional programs:

- (i) Forest Resources Development Programme
- (ii) Nature Conservation Programme
- (iii) Social Forestry Development Programme
- (iv) Forestry Protection and Utilization Programme
- (v) Forest Management Information System
- (vi) Development of Wood-based Industries
- (vii) Human Resource Development
- (viii) Bhutan Forestry Training Institute

Besides these programs, the following programs are implemented by the forest research centres, the FDCL and the Dzongkhag Administration.

- (i) The Forestry Research Programme is responsible for four research centres located in different ecological zones.
- (ii) Timber harvesting and marketing are overseen by the FDCL. Authorized wood harvesting and the marketing agency also belong to the FDCL, which has both commercial and social responsibilities. The FDCL's commercial activities comprise harvesting, marketing, road construction and afforestation. Under the social responsibility falls the provision of rural timber from the FDCL's depots. The FDCL harvests and extracts timber through contractors. The MOA has direct control over the FDCL through its board of directors. The commercial activities and the social responsibility of the FDCL need to be delineated more clearly in the future, for the FDCL to function properly.

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<sup>14</sup> The GYT is a political body at the block level, in which the head of the block, national assembly members, village elders and government officials meet regularly to discuss development and other issues.

<sup>15</sup> The DYT is also a political body at the district level and has very similar functions to the GYT.

- (iii) The Dzongkhag Forestry Sector is responsible for promoting and providing technical support in community and private forestry programs at the field level. The Social Forestry Development Division at the DoFS level provides overall technical support and coordination. The responsibility for administering rural wood supplies (for construction and fuelwood for rural households) is vested with the Dzongkhag Administration. The Dzongkhag Administration is also responsible for forestry extension and other matters related to social forestry.
- (iv) The Ministry of Trade and Industries approves operating licenses for wood-based industries.

The private sector<sup>16</sup> operators comprise contractors and industrial entrepreneurs. Contractors (under the supervision of the FDCL) build the forest roads, carry out logging operations and transport the harvested wood. All wood-based industries are owned and run by private entrepreneurs.

### ***Impacts and effectiveness of forest policy implementation***

The Forest Policy has been instrumental in the development of the forestry sector since its promulgation in 1974. In 1991, an attempt was made to review the policy. However, the 1991 Forest Policy is still at the draft stage. The policy has provided a new direction with the inclusion of people-oriented programs. Many other activities have taken place leading to a re-organization of the DoFS.

The policy was the basis for the formulation of the Forestry Sector Master Plan, which followed a program formulation framework. The program approach provided the means to identify critical elements for achieving the goals and objectives of the Forest Policy.

The Forest Act and supporting by-laws and rules outline provisions to control undesirable activities. Special measures have been taken to protect and rehabilitate watersheds and to conserve the rich biodiversity. The measures are complemented by people-oriented programs. The conservation and people-oriented policy and the sincere efforts of the government to implement them have been appreciated by the donor community and the general public. Donor support for different forestry programs has been increasing.

### **Institutional impacts**

Implementation of the forest policies led to a complete reorganization of the DoFS, which had to fit into the overall government structure. The functional divisions of the DoFS were strengthened not only with more human resources and facilities but also with specialized field staff. The territorial divisions were reduced in size so that divisional forest officers could cope with the supervisory and management needs of the division. In particular, the capacity to prepare and implement forest management plans was improved to provide forest products for industry and local use on a sustainable basis. The capacities to plan and monitor the programs were also enhanced.

### **Economic impacts**

The implementation of forest policies created a favourable environment for the development of forest-based industries for domestic and export markets. Forest resource inventories and management plan preparation were streamlined and accelerated to make more wood available. With the management plans in place, forest produce could be generated in increasing quantities on a sustainable basis. The quantities are predictable, which means appropriate industries could be planned and established. This supports wood processing, employment generation and business opportunities. Benefits have trickled down to the village levels as markets for farm products are

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<sup>16</sup> Association of Wood-based Industries

created. This led to the creation of economic opportunities and access to forest products for all Bhutanese people.

The policies also support research to improve traditional knowledge of the use of herbal plants and other NWFPs, to create favourable conditions for people to grow forest trees on private land and to take part in the management of forest resources. The strong conservation policy of the forestry sector also indirectly contributes to the economic well being of the people by enhancing hydropower potential.

The government has made available considerable financial and human resources, particularly to achieve the conservation goal. However, without people's participation many programs will not have the desired impact. With people's participation, the cost to the government has been reduced to a large extent. People are expected to provide the necessary inputs for their own benefits.

### Environmental impacts

The implementation of the Forest Policy has had positive impacts on the environment. The policy strongly emphasizes that 60 percent of the land area should be kept under forest cover forever. Presently, 72.5 percent of the land area is under forest cover.

The policy prohibits *ad hoc* timber harvesting. Harvesting is to be carried out only in the FMUs with approved management plans. The Forest and Nature Conservation Act (1995) mandates the DoFS to ensure that appropriate plans are prepared and implemented. By-laws have been framed and passed incorporating these policy objectives and now timber harvesting takes place only in FMUs with valid and approved forest management plans.

The Forest and Nature Conservation Act of 1995 controls activities that may be detrimental to the environment, even on private land. Private land with environmental problems or land that may be needed for conservation purposes can be taken over by the government after compensation is paid.

### Social impacts

The Forest Policy directs that "forest use should contribute to social justice and equity". Forestry should interact and support farming systems and contribute to food production. The long-term needs of Bhutanese people for wood and other forest products are to be met through the sustainable management of forest resources.

As empowered by the Forest and Nature Conservation Act (1995) the MOA formulated the Forest and Nature Conservation Rules (2000), which recognize people's participation in different forestry activities. Implementation of the policy has led to the formation of a strong social and community forestry program with supporting acts and legislation that protect the interests of the rural people. A decentralized forestry extension service has also been created. The Forest and Nature Conservation Act protects the traditional rights of people to forest produce. Opportunities are created for the employment of skilled Bhutanese people in forestry.

The policy ensures that all concerned stakeholders are consulted in forest management plan preparation and implementation, watershed management, nature conservation programs, etc. The private sector initiative has had prominent and encouraging impacts on harvesting, transport of timber and road construction. In the future, reforestation and afforestation programs are likely to attract more private sector interest.

### Inter-sectoral impacts

The implementation of the forest policy has benefited various sectors and ministries. The protection and rehabilitation of watersheds and proper forest management practices have improved the flow and quality of water needed for hydropower generation. The sustainable harvest of forest produce assists the private sector in operating viable industries.

## ***Impediments to policy implementation and efforts to overcome them***

### **Lack of skilled human resources and funds**

Effective policy implementation has suffered from the shortage of skilled human resources. Human resource development (HRD) has been accorded high government priority to overcome this problem. Support for HRD in the private sector also has high priority. The smooth implementation of the policy has also been affected by limited funds. The MOA is trying hard to mobilize and secure enough funds for policy implementation.

### **Supporting by-laws**

The Forest and Nature Conservation Rules are instrumental for the implementation of the Forest and Nature Conservation Act. Prior to 2000, implementation of the policy and act was difficult.

### **Information system**

Information on forestry was very poor in the past. The information collection mechanism has been improved and streamlined. Forestry information is transmitted electronically, from the field to headquarters. Data are analysed and there is a feedback mechanism.

### **Lack of extension material**

The forestry extension network is still young. Recently more people, who have been trained in extension, have been posted to the Dzongkhags. Better extension materials are needed. Efforts are being made to address this issue.

## ***Monitoring and evaluation mechanism***

M&E for all functional and operational programs in forestry will be done in accordance with the M&E initiative of the MOA. Each lead agency will be responsible for regular M&E of its own programs and the timely submission of reports. The Information Management Section<sup>17</sup> of the DoFS will be responsible for compilation, analysis and submission of reports to the MOA.

### **Monitoring of strategic, functional and operational programs**

Each of the matrices specifies a set of outputs, targeted activities and budget by sub-programs. The monitoring system is built into each program matrix. The concerned agency will monitor, on a quarterly basis, the physical progress towards each output by assessing the extent to which targeted activities have been accomplished. The lead agency will also carry out financial monitoring. At the geog level, the Dzongkhag forestry sectors will encourage the geogs to monitor and evaluate their plans.

### **Evaluation of functional and operational programs**

The lead agency will evaluate the output specified for each sub-program regularly to determine the rate of achievement. Verifiable indicators have been prepared for each output.

### **Progress reporting for strategic, functional and operational programs**

The DoFS will publish an annual forestry progress report. With the establishment of the Information Management Section, the data generated will serve as input to the national database system.

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<sup>17</sup> The Information Management Section is expected to be functional by July 2002.

### ***Information feedback into the policy formulation process***

The information available in the national database system is reviewed and used during the policy formulation process.

### **Conclusion and recommendations**

Forests play a central role in Bhutan's development. Forest resources are an integral part of agricultural production systems and will continue to play a critical role in the welfare of the rural and urban population. Forest conservation and development are also intimately and uniquely linked through the protection of watersheds to guarantee hydro-electric potential.

During the Ninth Plan period, the forestry sector is determined to build on its strengths and to address its weaknesses to fulfill its national responsibilities as set out in the Forest Policy and to meet the challenges of Bhutan 2020 and the RNR sector goals.

Strategies that take into consideration all aspects of RNR concepts need to be developed for:

- Land-use planning;
- Increased timber production and downstream processing facilities;
- Reduced fuelwood consumption through alternative sources of energy;
- Encouraging people's participation in forestry;
- Sound timber harvesting and an effective distribution mechanism;
- Implementation of community and private forestry, and effective extension; and
- Watershed management for exploiting hydropower potentials, and integrated water resource management.

Appropriate policies in support of sustainable forest management need to be implemented by designing strategies and guidelines. Formulating another policy at this moment is not foreseen.

Steps for addressing some of the concerns mentioned above have already been taken by the DoFS. The Ninth Plan has already embarked in that direction and four priorities have been identified in the forestry (RGOB 2002b). They are:

- Strengthening the capability of the Dzongkhag extension staff to implement the decentralized forestry activities;
- Encouraging greater people's participation in forest management, through private and community forestry, and also through greater involvement in the management of FMUs and other national forests;
- Increasing sustainable utilization of forest resources, including NWFPs, to generate employment and income while maintaining the condition of the forests; and
- Creating an appropriate policy and legal environment for the development of wood-based industries.

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## **Appendix 1. NATIONAL FOREST POLICY OF BHUTAN, 1991 (DRAFT)**

### **Purpose and goals of the forest policy**

The purpose of the Forest Policy is to ensure that forest resources are used according to sustainable principles, contributing to social justice and equity. The Policy will primarily ensure conservation of the environment, and only thereafter aim at derivation of economic benefits from the forest as a rationally managed resource.

Four goals have been set to direct the Forest Policy:

#### **Goal 1**

Protection of the land, its forest, soil, water resources and biodiversity against degradation such as loss of soil fertility, soil erosion, land slides, floods and other ecological devastation and the improvement of all the degraded forest areas, through proper management systems and practices.

#### **Goal 2**

Contribution to the production of food, water, energy and other commodities by effectively coordinating the interaction between forestry and farming systems.

#### **Goal 3**

Meeting long term needs of Bhutanese people for wood and other forest products by placing all country's production forest resources under sustainable management.

#### **Goal 4**

Contribution to the growth of national and local economies, including exploitation of export opportunities, through fully developed forest based industries. And to contribute to balanced human resources development, through training and creation of employment opportunities.

The following policy objectives have been formulated to achieve the goals:

#### **General principles for forest use**

The forests of Bhutan are a national resource and part of the country's common heritage. It is necessary to protect the forests as well as to provide access to their products, both for present and future generations.

All the forestland will be divided into protected areas, production forests and community forests, and identified on a reliable map.

The conservation of the forest environment, its resources and its diversity, will be the basic principle in the management of all forest areas independent of legal status or land use.

No utilization of forest resources will take place without a management plan approved by the government.

Denuded and degraded forestland will be afforested.

No forestland will be converted to other uses without a Royal decree.

#### ***Protection of forests, climate, soil, water and wildlife***

To assure successful conservation of forest ecosystems, their genetic resources and biodiversity, a properly documented management plan will be prepared and implemented for all areas, taking into account the specific requirements of each location.

Forestland will be managed in a way that soil losses and erosion are avoided and land capability maintained.

Forest management systems will be developed and practiced, which will improve water quality and maintain proper water balances, allowing optimum stream flow during the monsoon as well as in the dry season, maintenance of good water quality and mitigation of floods.

Special management rules will be defined to protect critical watersheds from irreversible changes in their flora, fauna and ecology. These rules will also cover priority watersheds, where management rules will focus on avoiding harmful effects to the people and systems downstream.

Representative protected areas will be maintained in each zone in order to conserve the unique biodiversity and ecosystems of the Kingdom in their original natural state. The uses of these areas will include research, recreation and appropriate local uses. The principles of selection and development of these areas will include considerations of value for alternative uses and population pressure in the area.

The principles regarding the maintenance of biodiversity will also be applied to production forestry. This includes avoiding any drastic alteration in the composition of tree species in extensive areas. Special care should be applied in the introduction of exotic species.

### ***Supporting forest use and participation by local people***

Forest practices, including social and community forestry, that improve the availability of fuelwood, fodder and other forest produce on a sustained basis for farming and local needs, will be encouraged and supported.

Multiple uses of the forests including livestock grazing, production of fodder, firewood and non-wood forest products, will be monitored and controlled in order to maximize their contribution to local economies, to meet the basic needs of the people in a sustainable way and at the same time to minimize the harmful effects due to indiscriminate use.

Proper agro-forestry and agro-silvo-pastoral techniques will be developed, in order to increase output and decrease the harmful effects of present farming practices, and in particular, to discourage unsuitable shifting cultivation.

Traditional knowledge of the use of herbal plants and other non-wood forest products, will be encouraged and strengthened by proper research, development and an integrated approach.

Access to forest products for all Bhutanese people will be improved by creating distribution, marketing and proper monitoring systems.

The Government will encourage the users of forests to participate in the development and management of their local forests.

The Government will encourage and develop favorable conditions for forestry on private registered land.

The Government will encourage the forest extension service, which will understand villager's forestry related problems and work with them to improve local forest management. It is important to make certain that the villagers know the rules and regulations as well as options available to them.

### ***Forest production and harvesting***

All suitable forest areas will be put under sustainable management as production forests. Sustainability in production forests means that the annual harvest and other loss of timber does not

exceed the average annual long term growth for the total area under each forest management plan, and that soil fertility does not decrease.

The harvesting of all forest products will be done in such a way that unnecessary losses are avoided and the productivity of the forests is maintained.

Timber harvesting will only be carried out by an organization authorized by the government.

The forest resources will be harvested through construction of roads and logging in a way that minimizes land and forest degradation.

Management plans will be implemented efficiently by developing economically and ecologically sound silviculture and harvesting systems.

The Government will encourage and develop favorable conditions for forestry on private registered land.

For full appreciation of the forest resource, the royalties and prices should reflect the true value of the wood.

### ***Industrial utilization of forest products***

The Government will create a favorable environment for development of forest industries for domestic and export markets. This support will include institutional development, analysis and exploitation of market opportunities, socio-economic planning, physical infrastructure, and contributions to training, research & development, and financing.

Based on an analysis of present and future raw material availability, and the demand and supply of wood based energy, environmentally sustainable and economically viable forest based industry will be encouraged.

Healthy and integrated development of efficient forest based industries required rapid progress in the preparation of inventories and management plans, and regular and assured supply of raw material. No new forest based industry will be established unless guarantees of the sustained availability of raw materials are established through proper forest inventories, and environmental impact assessments are undertaken.

Appropriate home and cottage industries and further processing of primary products that will add value to the basic forest products will be encouraged in order to support the economy of the local communities and improve the standard of living of people particularly in rural areas.

### **Human resource development in forestry**

By creating opportunities for skilled employment, the forestry sector will contribute to an improvement in the standard of living in Bhutan.

Realizing the key role of human resources development, primary emphasis will be put on formal, vocational on-the-job training, as well as the management of human resources.

## **Appendix 2 : TIMBER MARKETING AND PRICING POLICY (1999)**

MINISTRY OF AGRICULTURE  
ROYAL GOVERNMENT OF BHUTAN  
THIMPHU BHUTAN

### **Background**

The last three decades of planned development has brought about significant changes in the socio-economic condition of the people of Bhutan. Tremendous progresses have been made in all the sectors including the Renewable Natural Resources Sector. In line with the economic development and the changed socio-economic conditions, there is a need to review the economic policies that were put in place at the beginning or during the early years of planned development.

The present timber marketing and pricing system has served its purposes till now, but in the light of the changes in the socio-economic condition and the developments in the economy, there is a need to revise the policies to facilitate the move towards a free market economy. Even though Bhutan is rich in forest resources, significant progress in the development of wood based industries has not been achieved. This revision is aimed at improving the transparency in the system, encouraging local timber based industries and providing equal opportunity to all Bhutanese nationals in accessing the forestry resources.

Presently, because of the lucrative export market for prime timber, there is shortage of timber in the market for local consumers. The present system is geared more towards revenue generation through export of prime timber, which compromises the national policy objectives of forest conservation and promotion of local industries for enhancement of economic growth. The present system involves lengthy procedural formalities, including voluminous paper work often causing inconveniences to the consumers.

Further, there is a need to eliminate misuse of subsidies on timber for rural house construction, provided under the present policy. Diversion of subsidised timber to urban areas and availing of subsidised timber more than the entitlements are some of the loopholes in the present system. While it is important to provide subsidies on timber for rural house construction, it is equally important to ensure that the misuses of the subsidies are eliminated.

### **Policy objectives**

The long-term objectives of the timber marketing and pricing policy are to:

- facilitate establishing economically viable timber-based industry through effective timber marketing and pricing system;
- enhance sustainable use of forest resources by balancing commercial utilisation with environmental conservation;
- generate employment and enhance the income of Bhutanese citizens; and
- ensure equity and fairness to all Bhutanese citizens in accessing opportunities from the forest resources.

The short-term objectives of the timber marketing and pricing policy are to:

- make the timber available to Bhutanese consumers on a timely basis and with minimum formalities;
- ensure fairness, equity and transparency in timber marketing and pricing; and
- encourage the establishment of local timber based industries.

## **Provisions of the timber marketing and pricing policy**

As per the provisions of the Forest and Nature Conservation Act, 1995, commercial production of timber will be undertaken by the agencies of the Ministry of Agriculture only based on approved Forest Management Plans.

### ***Sale of timber and usage***

- a. The Ministry of Agriculture, through its agencies, will continue to harvest and market timber
- b. Sale of timber will be conducted through open auctions by the timber producer.
- c. Only Bhutanese citizens will be allowed to participate in the auction.
- d. Timber will be auctioned in small volumes, as practically possible, to encourage small consumers to take part in the auction.
- e. The buyers will be allowed to decide on the usage of timber purchased in the auction within the country.
- f. Export of timber in either log form, sawn form or as firewood will be banned. Only finished or semi-finished products will be allowed to be exported.
- g. Auctioned timber will be properly labeled, to identify the auction depot, type and grade of the timber.
- h. Free movement of timber within the country, including logs and sawn timber, with proper documents will be allowed.

### ***Pricing of timber***

- a. Timber prices will be determined by market forces based on demand and supply.
- b. Ministry of Agriculture will intervene, depending on the circumstances and situations, to stabilize the process.
- a. Prices of finished and semi finished goods of wood based industries will be decided by the manufacturers.

### ***Timber for rural house construction***

- a. Timber for rural house construction will continue to be supplied and subsidised royalty rates enforced from time to time.
- b. Timber will be allocated for rural house construction based on standing trees throughout the country.
- c. The beneficiaries will arrange for timber extraction, sawing, etc.
- d. The rural timber allotted at subsidised royalty will be clearly marked as such and strict supervision will be exercised over its ultimate use.
- e. Misuse of rural timber allotted at subsidised royalty rate will be viewed very seriously and the offenders will be penalised, in addition to forfeiting their future entitlement for subsidised timber.
- f. To streamline the system of allotment of timber for rural house construction, entitlement, end use and safeguards to be incorporated in the system, the Ministry of Agriculture will conduct a review of the present system.

### ***Supervision and monitoring***

- a. The Ministry of Agriculture, through its agencies, will supervise and monitor the system.
- b. The Ministry of Agriculture will frame rules, regulations and guidelines, within the framework of policy guidelines, for the purposes of monitoring, supervising and regulating the timber marketing and pricing functions.

***Implementation schedule***

- a. The Timber Marketing and Pricing Policy guidelines will come into force with effect from January 1, 1999.
- b. The Ministry of Agriculture will undertake a study on the supply of timber for rural house constructions and revise the system, based on the findings and recommendations of the study. The revised system for supply of timber for rural house constructions will come into force from July 1, 1999.
- c. The Ministry of Agriculture, through its agencies, will work out the modalities of transition from the present system to the revised system.

## **Appendix 3. CHAPTER IV<sup>18</sup> SOCIAL AND COMMUNITY FORESTRY RULES**

### **Social and community forestry**

Forestry activities may be undertaken on private or in a Community forest, only in full compliance with the provision of this chapter. All other forestry activities shall be governed by relevant provisions of these Rules.

### **Assistance**

Upon request of the landowner or Community Forestry Management Group, the Divisional Forest Officer and the Department shall provide technical assistance on sustainable management of forests and may assist in providing tree seeds and seedlings.

## **PART A : PRIVATE FORESTS**

### **Land eligible for registration as private forests**

All private forests shall be registered pursuant to this chapter. For this purposes, a "Private Forest" may include land in the categories of kamzhing, tshesa, Pamgzhing, and tseri, within the 25 acre ceiling and including marginal lands and Pakshing zhing but shall exclude chhuzhing and those categories of registered private land outside the 25 acre ceiling, such as khimsa, ngul thok dumra, tsamdog, sokshing and chilgi zhing.

#### **(1) *Procedure for registration***

- (a) Landowners wishing to register a private forest may apply to the concerned Dzongkhag Administration through the Gup by completing three copies of form A. set out in Annexure I. These forms can be obtained from the Gups, the Dzongkhag Forestry Extension Office, or the nearest Forest Office.
- (b) After reviewing the application, the Gup shall forward two copies of the application to the Dzongkhag Administration certifying that the designated land is registered in the name of the applicant.
- (c) The Dzongkhag Administration shall review the application and have the Dzongkhag Forestry Extension Officer (DFEO) carry out field investigation to:
  - (i) Confirm the extent of the land and trees mentioned in the application.
  - (ii) Prepare a sketch map indicating the boundaries of the area proposed for Private Forest.
  - (iii) List the species and numbers of all planted or naturally growing trees within the proposed Private Forest area.

The DFEO shall forward the application with comments and recommendation to the Divisional Forest Officer (DFO) for consideration and recommendation.

- (1) Once the Divisional Forest Officer is satisfied that the details provided in the application are true, and that the applicant qualifies for registration of a Private Forest. He shall recommend the case to the concerned Dzongkhag Administration.

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<sup>18</sup> This is Chapter IV of Forest and Nature Conservation Rules, 2000

- (2) The Dzongkhag Administration shall review the field report and the recommendation of the DFO and if satisfied, issue the private forest certificate to the applicant in the form "B" set out in Annexure II. A copy of form A shall be attached to the certificate.

### Effect of registration

Following issuance of Private forest Certificate for a particular land are:

- (1) All trees and plants within that area shall be the private property of the landowner.
- (2) Private Forest lands shall continue to have the same land category status as registered in the thram.
- (3) Registration under this chapter shall not affect the tax status of the land so registered and shall continue to pay the Land Tax without alteration.
- (4) Registration under this Chapter shall not affect or eliminate any requirements of other laws, including the laws governing minerals, animal export etc.
- (5) Land within a private forest shall be maintained as primary forestland. Trees and agricultural crops shall be planted only where and to the extent compatible with management of the forests.
- (6) Taking of any protected plants or animal, as described in Chapter shall not be permitted under this section (except to the extent permitted under that Chapter), unless such plants or animals can be proven to have been planted or bred by the landowner.

### Cancellation of registration

Any landowner holding a Private Forest Certificate may cancel that certificate by informing the Dzongkhag Administration, and surrendering the certificate.

### **Royalties and permits**

#### **(1) General**

- (a) The Department shall not levy any royalties on trees or wild plants produced and harvested for any purpose whatsoever from a Private Forest.
- (b) No permit is required to harvest any tree or wild plant (except one that is protected under Chapter (VI) from a private forest provided that registered trees (not planted by the owner) are harvested as per management plan prescription.
- (c) A permit is required to harvest trees and wild plants from private lands, which are not registered as Private Forests.

#### **(2) Transportation**

The owner of a Private Forest shall be permitted to transport forest produce from the Private forest within Bhutan provided:

- (a) the owner obtains a transit pass, or otherwise complies with the requirements under Chapter V. A transit pass shall be issued only if the holder can prove to the satisfaction of the Forest Officer that the harvested produce is from his Private Forest. For this purpose, timber that has been verified and marked by the Forest Officer, prior to being taken from the Private Forest shall be permitted.
- (b) the owner complies with all the regulations regarding transportation of forest produce, as set forth in or adopted under chapter V of these rules.

## **Offences in private forests**

Except pursuant to a special permit or Technical Regulation issued under Chapter VII, or in the case of plants proven to have been planted by the landowner, any person killing, injuring, or taking totally protected plants listed in Schedule 1 of the Act that may exist within a private forest shall be guilty of an offence.

## **PART B: COMMUNITY FORESTS**

### **Selection of potential community forest areas**

- (1) Any areas of Government Reserved Forest that is suitable for management by a Community Forest Management Group (CFMG) may be designated as a Community Forest, pursuant to the procedures described in this Chapter.
- (2) An area may be considered suitable for control and management by a CFMG if it meets all the following criteria:
  - (a) It is within reasonable distance from the settlements occupied and represented by the CFMG.
  - (b) It satisfies at least one of the following criteria:
    - (i) the area has potential to supply forest produce for local consumption and/or income generation for a CFMG.
    - (ii) the area plays a role in protecting soil, water and genetic resources.
    - (iii) the area is suitable for community managed regeneration through plantation and protection of naturally growing seedlings:
    - (iv) the area is traditionally used and managed by members of the Community, if applicable.
    - (v) the local householders are willing and able to form and co-operate as a CFMG to manage the forest in accordance with these Rules;
  - (c) the size of the area is not more than 2.5 ha per household that shall participate in the CFMG, subject to marginal increase/decrease where the Department determines that this adjustment is necessary in response to the local situation.
  - (d) the area will comprise of both degraded and good forest with equal ration, where ever possible.

### **Establishment of a community forest**

In order to establish a Community Forest, the applicants must form a Community Forest Management Group, submit an application for designation of a Community Forest, and prepare a management plan for the Community Forest. These documents must comply with the comments and requirements of the Department as prescribed in the following sub-sections.

**(1) Formation of a Community Forest Management Group (CFMG)**

Any group of at least ten households willing to establish, control and manage a forest area as a Community Forest in accordance with these Rules, may form a CFMG, by meeting the following requirements:

- (a) All individuals and households with traditional claim to forest produce from the proposed community forest area shall be provided full opportunity to join the CFMG.
- (b) The group shall select its initial management committee and a Chairperson.
- (c) The CFMG shall prepare and adopt a constitution and by-law, which shall include the following:
  - (i) The name of the CFMG
  - (ii) The objectives of the CFMG
  - (iii) A list of households in the CFMG (showing the household numbers, thram numbers, and the name of the household representatives).
  - (iv) A list of the initial members of the CFMG's Management Committee.
  - (v) the requirements and procedures for becoming a member of the CFMG.
  - (vi) the rights and responsibilities of the members.
  - (vii) the size of the CFMG's management committee and its members.
  - (viii) the procedures for selection of management committee members, including their time in office.
  - (ix) the procedures for allocation and utilization of forest produce from the community Forests .
  - (x) the procedures for control, management and utilization of CFMG funds.
  - (xi) the procedures for resolving disputes; and
  - (xii) rules and procedures for all decisions concerning the collection, management and expenditure of the funds of the CFMG.
- (d) At any time during its existence, the CFMG may make changes to the constitution and by-laws by vote in accordance with its governing procedures. The changes shall not be effective until CFMG has informed the Dzongkhag Administration and DFO. The CFMG shall attach a copy of the revised constitution and by-laws in its annual report and shall co-operate with all recommendations and directions concerning these revisions.

**(2) Selection of areas**

Working with the DFEO and the Department, the CFMG shall select a suitable forest area, determine the current management status of that area, and the effect of the area on nearby areas. The CFMG shall work with the DFEO and Department to determine recognizable boundaries, prepare a map and other requirements.

**(3) Preparation of management plan**

With the assistance of the DFEO, the CFMG shall prepare a Community Forest Management Plan, in accordance with the Technical Regulations adopted under Chapter II.

**(4) Submission of application**

The CFMG shall submit application, including the management plan, the constitution and by-laws of the CFMG and such other forms and documents as may be required by the Department.

## **(5) Procedure**

The process for application and registration of a Community Forest shall be as under:

- (a) The CFMG shall apply for the establishment of the community forest by submitting the application form C in Annexure III through the Dzongkhag forestry Extension Officer (DFEO) to the Dzongdag. A copy of the application shall be forwarded to the Divisional Forest Officer (DFO) for information and joint inspection with the DFEO.
- (b) After reviewing the application, the Dzongdag shall direct the DFEO and request the DFO and Range Officer to jointly inspect the area applied for and the qualifications of the group to manage it. After the inspection, in the event the DFEO and the RO find the application to be consistent with the rules, the DFEO and the RO shall recommend the case to the Dzongdag and the DFO respectively.
- (c) Upon reviewing the recommendation of the RO and DFEO, the DFO shall advise the Dzongdag of his acceptance. On acceptance of the application, the Dzongdag shall direct the DFEO and request DFO and RO to jointly delineate the area and advise the CFMG to prepare a management plan with the assistance of the DFEO.
- (d) In case the area of the community forest to be handed over lies within the boundaries of two or more Dzongkhags, or two or more territorial forest divisions, the DFO and Dzongdag through whom the application has been submitted, shall be entitled to hand over the forest area as a community forest, after obtaining the consent of the neighbouring DFO and Dzongdag. The concerned DFO and Dzongdag shall be responsible for any and all assistance to the said community forest.

### **Review and approval of application**

- (1) The Department shall review all documents submitted and may require changes in these documents, if necessary. It shall also refer the application to the Dzongdag for its further comments.
- (2) Upon satisfaction, the department in compliance with the procedures set forth under this chapter, shall issue "Community Forest Certificate" to the CFMG as per Form D - as annexe IV

### **Effect of certification as a community forest**

Upon issuance of the community forest certificate, all forest produce from the community forest shall be the property of the CFMG.

- (1) Forest produce from the community forest may be extracted by the members of the CFMG for their own use.
- (2) Forest produce may be extracted by, sold to, or used by the other person only in compliance with sections (42(2) of these Rules.

### **Responsibilities of the Community Forest Management Group**

- (1) Under the overall supervision of the Dzongdag and with the technical and organizational support of the DFEO and the DFO each CFMG shall be responsible for the control and management of its Community forest, in accordance with the approved management plan.
- (2) The responsibilities of the CFMG shall include the following:

- (a) to protect, develop, sustainable utilize and equitably distribute tree and wild plant resources, and the income generated from those resources;
- (b) to protect wild animal and mineral resources in conjunction with the Department and other relevant organizations;
- (c) to protect and save the forest from forest fire, in conjunction with the Dzongkhag Administration and other relevant organization;
- (d) to reforest areas that are damaged or destroyed by fire;
- (e) to ensure transparency and accountability in the management of the forest and affairs of the CFMG.

### **Cancellation of the community forest certificate**

- (1) In the event the members of the CFMG decide to do so in accordance with its by-laws, the CFMG's Certificate shall be cancelled immediately as of the date that it:
  - (a) give notice of this decision to the Dzongkhag Administration and the DFO and
  - (b) surrenders the certificate to the Dzongkhag Administration.

The Dzongkhag Administration and the DFO reserve the right to enquire into the reason for this decision, and to ensure that no offences has been committed as outlined under these Rules.

- (2) If the member households in the CFMG drops below 10 or the group otherwise ceases to meet the requirements of section 36, the Dzongkhag Administration shall notify the CFMG that it's certificate shall be cancelled unless it can increase its membership to meet the required criteria within a month from the date of such notice.
- (3) In the event the DFO and the Dzongkhag Administration jointly determine that a CFMG.
  - (a) is unable to manage the Community Forest according to its approved management plan or otherwise meet its responsibilities as set forth in section 40, or
  - (b) has done something wrong which has resulted in adverse effects on the forest, or
  - (c) has engaged in activities that do not comply with the Act, or these Rules, or the management plan,

The DFO and the Dzongkhag Administration shall suspend the rights and privileges of the CFMG to control, manage and utilize the concerned forest area, and shall inform the Ministry of the decision.

- (4) Upon notification of the suspension, the Ministry may appoint an independent review team, which shall report its findings and recommendations to the Ministry for its final decision.

### **Administrative responsibilities and powers of the CFMG**

The CFMG shall be responsible to undertake the following activities, and shall be authorized with the power specified.

- (1) The CFMG shall mark forest produce in accordance with the relevant provisions of Chapter V. For this purpose, the CFMG shall have its own marking hammer, registered with and issued by the DFO under these Rules.
- (2) The CFMG shall issue such permits as required or allowed under these Rules. For this purpose, the CFMG shall have its own stamp, seal, and or permit, forms relating to extraction of forest produce from the community forest, which shall be approved by and registered with the DFO in accordance with these Rules.

- (3) The CFMG shall have the right and privilege either
  - (a) to take legal action against any person, who, without authorization collects, uses, removes, damages, or destroys forest produce from the community forest, whether a member of the CFMG or not or
  - (b) to report such offences (or other offences under these Rules) to the concerned Forest Officer.
- (4) All Monies of the CFMG shall be deposited in a separately maintained fund in the name of the CFMG. Monies governed under this section shall include, but are not limited to, the following.
  - (a) ones earned by or accrued through, or acquired for activities in the community forest;
  - (b) all proceeds of the sale, transfer, distribution or other transactions involving forest produce from the community forests.
  - (c) all amounts (including all cash received, as well as the encashed value of all in-kind payments) received as fines for violations of compensations.
  - (d) all grants, donations and other funds received from any person, organizations or from the Government.
- (5) Money from the CFMG's fund may be used to cover any and all expenditures that may be borne by the CFMG in discharging its responsibilities, as sets forth in this chapter, and for all Community Forest development activities in accordance with the Management Plan.
- (6) If the amount of the CFMG's fund exceeds the above expenditures and contingency fund, the excess may be used in any way that the member of the CFMG shall decide.
- (7) The CFMG shall maintain records of all financial transactions, including all income generation, distribution, expenditures, bank records, and other financial matters, and make these records available for inspection by the members and the Department.
- (8) The CFMG shall maintain records of all forest management activities and operations, including forest protection and development activities afforestation, cultivation, planting, harvesting, transit, permit issuance, and other actions. Such records shall be made available to the DFO and DFEO.
- (9) The CFMG shall prepare and submit a financial report of its activities to the Dzongkhag Administration with a copy to the DFO within one month of end of the fiscal year. The report shall contain the following information.
  - (a) activities completed as prescribed under the Management Plan;
  - (b) quantity of each type of forest produce harvested;
  - (c) quantity of forest produce sold to persons and entities other than the CFMG and its members, and the amount of proceeds of those transactions;
  - (d) summary of financial accounts for the year (income, expenditure and the disbursement of profits);
  - (e) such other information concerning the operations, activities and management Community Forest as the Department or the Government shall require.
- (10) The CFMG shall conduct at least one general meeting of the members each year, to review the annual report, plan activities, and discuss and decide other issues relevant to the control and management of the Community Forest.
- (11) The CFMG shall be responsible to take reasonable measures to prevent illegal activities including violations of the Management Plan, within the Community Forest.

## **Management and use of forest resources/permits and royalties**

The CFMG shall authorized to undertake the following activities with regard to the management and use of forest resources within the Community Forest:

### **(1) Forestry activities**

The CFMG may establish (plant or saw) plants, including perennial cash crops, in the Community Forest, so long as these activities meet all of the following criteria to the satisfaction of the Department/

- (a) the planting and use of the crops meets local needs or interests;
- (b) the plantings are designed in a manner consistent with approved practices or Management plan to present and improve soil and water conservation.
- (c) the plantings are located in and help restore degraded areas of the Community Forest;
- (d) the plantings do not adversely affect the crown cover, native bio-diversity, and the general production of forest produce.

### **(2) Harvesting**

The CFMG may harvest (or authorize or direct the harvest of) forest produce from the Community Forest on a sustained yield basis within the prescriptions of the Management Plan.

- (a) Any member of the CFMG may harvest and extract forest produce from the Community Forest without a permit, so long as he acts in accordance with the Management Plan, these Rules and decisions of the CFMG and its management committee.
- (b) Any person who is not a member of the CFMG may not extract any forest produce from the Community Forest, unless he obtains permission from the CFMG and or the management committee in accordance with the by-laws and other rules adopted by the CFMG with regard to non-members use of forest produce from the community forest.

### **(3) Royalties and permits**

No royalties and permits shall be required with regard to such harvesting where the harvest is conducted or permitted by the CFMG for personal use by the member households of the CFMG, provided such harvesting is done as per Management Prescriptions.

### **(4) Sale of forest produce**

- (a) The CFMG may set prices for the sale of forest produce to members of the CFMG.
- (b) When the amount of forest produce harvested from the community forest in accordance with the Management plan exceeds the requirements of the members of the CFMG, the CFMG may sell (or authorize its members to sell) the excess produce to persons, Agencies or authorities outside the CFMG.
  - (i) The prices shall be as set by the CFMG
  - (ii) The Department may impose a royalty on timber and fuel wood sold by the CFMG as per the Royalty Notification issued from time to time.
  - (iii) No royalty shall be levied on forest produce other than timber, which is harvested from the Community Forests and sold by the CFMG

## **(5) *Transportation***

- (1) No person, whether a member of the CFMG or not, shall transport forest produce from a community forest without a transit pass, obtained in accordance with chapter V.
- (2) The CFMG and its members shall be permitted to transport timber from the community forest within Bhutan, provided that:
  - (a) the timber has been properly marked, in accordance with these Rules and Management Plan of the CFMG; and
  - (b) the owner complies with all regulations regarding transportation of forest produce, as set forth in or adopted under chapter V of these rules.

## **Power of the department**

Notwithstanding the power of the CFMG as described in section 42 the Department is empowered to take action with regard to the community forest, as in any other forest of Bhutan. In addition, the Department is specifically empowered to:

- (1) take action against violators for violations within the community forest when requested to do so by the CFMG;
- (2) take action against violators of the Act, Rules or Management Plan regardless of whether requested by the CFMG or not.
- (3) inspect, monitor, review the records of and otherwise supervise the activities of the CFMG, and take action (including revocation of the CFMG's certificate, where warranted under these Rules) against the CFMG or any of its members who may be acting in violation of the provisions of the Management Plan or any provisions under this chapter; and
- (4) establish record-keeping and financial reporting obligations.

## **Offences relating to community forests**

Except with specific permission from the Department, because of its necessity to the protection of the forests, any person undertaking the following activities within a Community forest shall be guilty of an offence.

- (1) any forest use or other activity in violation of the Management plan;
- (2) selling, leasing, mortgaging or otherwise alienating all or any part of the Community Forest;
- (3) killing, injuring, or otherwise taking any of the protected plant or animal species as defined under chapter VII except in accordance with that chapter.,
- (4) disposing of any waste or other potentially polluting substance in a water source or water course, or doing any other activity that may pollute water source or watercourse;
- (5) leaving any fire burning in a manner that may damage, destroy, or endanger trees, wild plant or animals;
- (6) burning lime or charcoal or conducting any other manufacturing process; except with licenses or permits pursuant to these Rules, the following activities shall not be permitted within a community forests.
  - (i) clearing, breaking up, or otherwise using or preparing the land for permanent cultivation, shifting cultivation or other land use;
  - (ii) building houses, huts, roads, fences, enclosures, or other structures;
  - (iii) taking of mineral resources (boulders, stone, rocks, gravel, soil, and minerals).
  - (iv) disposal of garbage and other waste materials; and
  - (iii) setting fire unless required as per Management Plan.

## **Government responsibilities and offenses**

### ***Monitoring and evaluation***

#### **(1) Private forests**

- (a) The Dzongkhag Forestry extension Officer (DFEO) may inspect the condition of Private Forests and may require any person who claims any rights of exemption under Part A of this chapter to produce his Private Forest Certificate, and prove his compliance with the requirement of this chapter.
- (b) After the end of each fiscal year, the DFEO shall prepare and submit an evaluation report on Private forest in the Dzongkhag providing one copy to the DFO and another copy to the Department. The report shall address the issues specified by the Department.

#### **(2) Community forests**

- (a) The DFO and the DFEO shall be responsible for conducting regular monitoring and evaluation of each Community Forest.
- (b) The DFO, DFEO and the Dzongdag may inspect the community forest from time to time.
- (c) After the completing of each Ten Year Plan, the DFEO shall prepare and submit a status report and evaluation on Community Forest in its Dzongkhag., it shall submit one copy to the DFO, and another to the Department. The evaluation report shall emphasize inputs, outputs, social and environmental issues and impacts.

### **Technical assistance**

- (1) Upon the request of the CFMG or private forest certificate holder, the DFEO shall provide technical and organizational assistance for the management of Private Forests and Community Forests.
- (2) The DFO and Functional Section of the Department shall provide the following with regard to Private and Community Forest:
  - (a) subject matter advice and support to the Dzongkhag and the Renewable Natural Resources Extension staff; and
  - (b) free technical advice and support to the Dzongkhag Forestry Extension staff.
- (3) The DFEO shall provide such assistance as may be necessary to the CFMG in developing and adopting its constitution and by-laws.

## **Appendix 4. Important provisions of forest and nature conservation rules, 2000**

### **Forest and Nature Conservation Rules (2000), Volume I & II**

The Forest and Nature Conservation Rules, 2000 has been enacted in two volumes. The volume I deals with (i) Management of production forests (ii) private and Community forestry rules (iii) Timber production and trade within the country (iv) management of Protected Area systems (v) land clearance in Government and even in private land (vi) penalties and punishment for defaulting in the above-mentioned cases.

This Volume provides adequate legal backing for encouraging private and community forestry program in the country. Some of the important Sections dealing with private and community forestry including the definitions are given below:

#### ***Private forest***

Section 2(21) "*Private forest shall mean any area of private lands that has been registered as a private forest pursuant to Chapter IV, Part "A" of these Rules*".(see also appendix 4).

Section 34(1)(a) "*The Department shall not levy any royalties on trees or wild plants produced and harvested for any purpose whatsoever from a private forests*."

Section 34 (1) (b) "*No permit is required to harvest any tree or wild plants (except one that is protected under Chapter VI) from a private forest provided that registered trees (not planted by the owner) are harvested as per management plan prescription*".

Section 34 (1) (c) "*A permit is required to harvest trees and wild plants from private land, which are not registered as private forests*".

#### ***Community forest***

Section 2(4) "*Community forest, as per Chapter 1 Section 3 of the Act shall mean any area of Government Reserved forest designated for management by a local community in accordance with the provisions under Section 36 of these Rules*<sup>19</sup>."

Section 17 (a) "*The Ministry may make rules for the establishment of community forests on Government Reserved forests*".

The above-mentioned provisions in Forest and Nature Conservation Act, 1995 and Rules provide legal backing to encourage any person to grow and nurture trees on his own private registered land and for establishing community forest on the Government reserved forest. To this effect, rules have been framed under Section 31 and 32 of Forest and Nature Conservation Rules, 2000 for registration of private forest. Regarding the permit and royalties for the produce from private forest, the provisions are provided in Forest and Nature Conservation rules, 2000.

The volume II of the Rules deals with supply of subsidized timber for rural house construction. Some of the important provisions are as follows:

#### **Supply of subsidized timber for rural house construction**

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<sup>19</sup> Forest and Nature Conservation Rules, 2000 (Vol. I).

- (i) Urban areas have been redefined by vicinity of the major cities, transport facilities, level of industrialization and overall infrastructure. (many areas previously defined as rural, has fallen in urban area);
- (ii) Only the rural dwellers who have land tenure certificates (*thram or goong*) will be eligible to subsidized timber;
- (iii) Increase the period of entitling the households to receive subsidized house construction timber from the present 25 years to 30 years;
- (iv) Fix the ceiling of quantity of allowed subsidized timber;
- (v) Increase the level of royalty (decrease the subsidy);
- (vi) People can avail either standing trees, or sawn timber, or logs or any combination thereof;
- (vii) Approval procedure has been decentralized at the *Dzongkhag* level;
- (viii) Monitoring of the implementation of this policy to be done by the Department of Forestry Services in collaboration with *Dzongkhag* Administration.

### ***On forest management and timber harvesting***

All accessible forest areas will be brought under sustainable management as Production Forests. Sustainability in Production forest encompasses three cardinal elements (i) ecological sustainability (ii) economical sustainability and (iii) social and cultural sustainability.

Forest and Nature Conservation Rules, 2000 requires that management plans are necessary for all Production Forests, Protected Area Systems, Community Forests and also for Private forests. However the Rules permit taking of forest produce for *bona fide* domestic uses from any part of the forest. Commercial harvesting of timber and other forest produce are to be done from FMUs only. Commercial harvesting of timber and other forest produce is not allowed from National Parks, Wildlife Sanctuaries and Strict Reserve areas.

Management plans, after preparation by the DoFS, are put under consultation process by involving all the relevant stakeholders. Their suggestions/comments are given due consideration. Environment Impact Assessment (EIA) is also required to be included in the management plans. (RGOB 2000).

Sustainability in production forest means that the annual harvest and other loss of timber does not exceed the average annual long term growth for the total area under each forest management plan, and that soil fertility does not decrease (RGOB 1991a).

### ***On non wood forest products (NWFP)***

According to Forest and Nature Conservation Rules of Bhutan 2000, “*non wood forest products shall mean resin, varnish, katha, kutch, plants, flowers, seeds, bamboo, bulbs, roots, fruits, leaves, grasses, creepers, reeds, orchids, cane, fungi, moss, medicinal plants, herbs, leaf-mold, or other vegetative growth, whether alive or dead, wild animals, including the skin, hide, feather, fur, horn, antler, tusk, bone, bile, musk, honey, wax, and lac and boulders, stone, sand, gravel, rocks, peat and soil.*”

Provisions are made in the Rules for proper regulations on the management and utilization of Non Wood Forest Products (NWFPs). Illegal collection of NWFPs for commercial purposes is not allowed. However development of cottage industries utilizing NWFPs as raw materials is encouraged which will help people to earn extra income.

Many cottage industries utilize NWFP, which has special markets, within and outside the country. Resin tapping and lemon grass oil distillation have become important activities in the eastern part of the country. Wood and Non wood based industries are seen as important means by which the government can uplift the economic standards of the rural people of Bhutan.

## **Appendix 5. Important provisions of land act of 1979, relating to forestry**

### **Land Act of 1979 (Volume KA)**

The Land Act also provides legal status to grazing land (*tsamdog*) and forest maintained for leaf manure (*sokshing*). The Land Act, 1979 defines *tsamdog* as “land used for grazing cattle” and “such land which can neither be allotted nor sold” but can be requisitioned by government in time of necessity without paying the cost. It also defines the *Sokshing* as “forestland maintained for manure and shall be used for manure only”. It exempts such types of non-commercial land use from state tax.

Land Act 1979 also deals on “**Trees growing in a registered land**” (Section KA 3.6) “*Naturally grown trees, which have been looked after and trees which have been planted on a registered land, except tsamdo, Sokshing covered under Section KA 6.10 and cash crop gardens, can be used by the thram holder for his own use. However, if these trees are to be used for commercial purposes it will be governed by Section Ka 4.6*” of the same Act.

**Section KA 4.6 deals with "Use of trees growing on land registered in one's thram for commercial purpose."**

*As per Section Ka 3.6 and Section Ka 3.7 "trees and thatch growing on land registered in one's name can be used for his own use without paying taxes. However, if he wants to sell it for commercial purposes he can do so after paying all Government taxes". The private property rights are recognized in the law.*