



## **SUPPORT for the FORMULATION of a NATIONAL FOREST POLICY STATEMENT – TIMOR LESTE**

# **FORESTRY SECTOR POLICY GOAL, OBJECTIVES and STRATEGIES**

### **Introduction**

The National Development Plan (2002) assigns the Ministry of Agriculture, Fisheries and Forestry (MAFF) as the Government agency having prime responsibility for forestry development. New law defined the Ministry's mandate and structure in 2002. The National Directorate of Coffee and Forestry (NDCF) is one of three national directorates within the ministry and has broad responsibilities for community forestry, watershed management, forest protection, plantation forestry, protected natural areas development and other aspects of forestry development.

The National Development Plan emphasises a sustainable approach to the development and management of the forest resources of the country. It recognizes that forests are important for their biological diversity and that forest conservation is a priority task in forest development planning.

National development strategies recognise the limited ability of NDCF to support field programmes and it asserts that they will mainly focus on improving that capability and assist in providing the basic steps that will enable the NDCF to work towards achieving the national objective of sustainable forest management. The strategies also attempt to make a contribution to other relevant Government short-term objectives, such as rural poverty alleviation.

The NDCF will make a major contribution towards combating deforestation and forest degradation by initiating, in close cooperation with other sections of MAFF, a series of integrated programmes that will closely involve rural communities. Emphasis will be placed on reducing the adverse effects of shifting cultivation and other pressures on forests and encouraging the participation of communities to protect forests and watersheds.

The National Development Plan notes that MAFF needs to urgently complete a new national forest policy and enact a new forest law and regulations.

Early in 2005 the Food and Agriculture Organisation of the United Nations was requested by the Government of Timor-Leste to contribute towards the formulation of new forestry sector policy and forestry legislation. This forest policy is the outcome of specialist advice provided between June and October 2005 to formulate a new policy.

### **Summary of the Present Situation concerning Forests in Timor-Leste**

Forests have always been important to the economy of Timor-Leste. While accurate data are not available, it is generally believed that the forests have been severely over harvested and degraded in recent times.<sup>1</sup>

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<sup>1</sup> República Democrática De Timor-Leste, Ministry of Agriculture, Forestry and Fisheries. *Policy and Strategic Framework, Section 2.3.* Dili, 15 September 2004.

The land can be broadly divided into six ecological zones: mountainous areas, the highland plains, moist lowland areas (along the southern coast), arid lowland areas (along the northern coasts), marine and coastal areas, and urban areas. Two indigenous tree species produce valuable timber, suren (*Toona sureni*) and sandalwood (*Santalum album*). Extensive areas of Ai ru (*Eucalyptus urophylla*) occur in moderately dense forest, and Ai bubur (*E. alba*), is found in open forest and savannah woodlands. The tropical dry monsoon forests include a mixture of species, of which the most important is Ai na (*Pterocarpus indicus*). Teak (*Tectona grandis*) is also a significant timber tree, first established in Timor more than 100 years ago. Suren is an attractive furniture timber whilst sandalwood is one of the most valuable and easily marketable of all timbers. Sandalwood exports declined sharply in the last years of Indonesian occupation.

Deforestation and degradation of the nation's forests is serious in most mountainous localities and in many arid lowland areas and is causing erosion of soil and rock and the aggradation of detritus in riverbeds. It is having an adverse effect on watershed condition – that is linked directly to water supplies for irrigation, and therefore to food security – and it weakens the potential for timber and fuelwood production. It also leads to decreased soil fertility, decreased water quality and the sedimentation of estuaries and reefs.

Forests help to maintain the fertility of soils, protect watersheds and reduce the risk of disastrous floods and landslides. Until relatively recent times the communities of Timor Leste had managed their watersheds in a manner that allowed for the sustenance of the local people and the production of a diverse range of valuable and easily tradable commodities. During the 20<sup>th</sup> century there was widespread despoliation of ecosystems and the unsustainable harvest and export of much of the country's most valuable forest resources, notably sandalwood, ebony and redwood, as well as endangered wildlife.

Forest loss, degradation and poverty are mutually reinforcing and unless addressed decisively in an integrated manner, will hamper poverty reduction and environmental security programmes in Timor-Leste. Accelerated economic growth and more human dependence on forests are undermining forest ecosystems and the services they provide, including the maintenance and quality of water yields, the conservation of biodiversity and sustainable agriculture.

Within Timor-Leste there is a strong demand for fuel wood for household use. This is presently met from largely unrestricted cutting from natural forests and is contributing to increasingly serious forest degradation. Reliance on fuel wood, especially in urban areas, has increased substantially since the removal of the kerosene subsidy in 1999. Plantations of fast growing trees will need to be established on suitable sites to produce sustainable fuelwood supplies in some areas that will help to relieve pressure on indigenous forest resources.

There is a steady requirement for sawn timber for building construction and for the manufacture of value-added wood products, especially furniture. Imports of sawn timber are said to be meeting most of the local demand presently but present timber use data are unreliable. Local resources of suitable timber trees are reported to have been severely over cut in the past, so that relatively little is now available. There appears to be little prospect for indigenous timber supplies meeting local demand in the near future. There are mixes of options for relatively rapid timber production for Timor-Leste that include the establishment of community forests that can be managed by rural communities and by industrial plantations.

Valuable non-wood forest products include honey, which has long been important although it is declining recently, and a small cottage industry producing bamboo and rattan furniture for local use. Bamboo and rattan are grow widely in Timor-Leste and are used for a multitude of purposes. Non-wood forest products are important sources of income for rural communities.

Forests are home to at least 80 percent of the worlds remaining terrestrial biodiversity and are a major carbon sink that helps to regulate the global climate. Protection of biological diversity is one of the most important functions of forests in Timor-Leste, as the country lies in an area of high biological interest, in the "Wallace Zone", where the Indo-Malaysian and Australasian flora and fauna overlap. Hunting of native fauna for "bush meat" is a concern but there are no data to allow an assessment of the significance of the hunting or of significant threats to the maintenance of biological diversity with the exception of some native birds, especially pigeons.

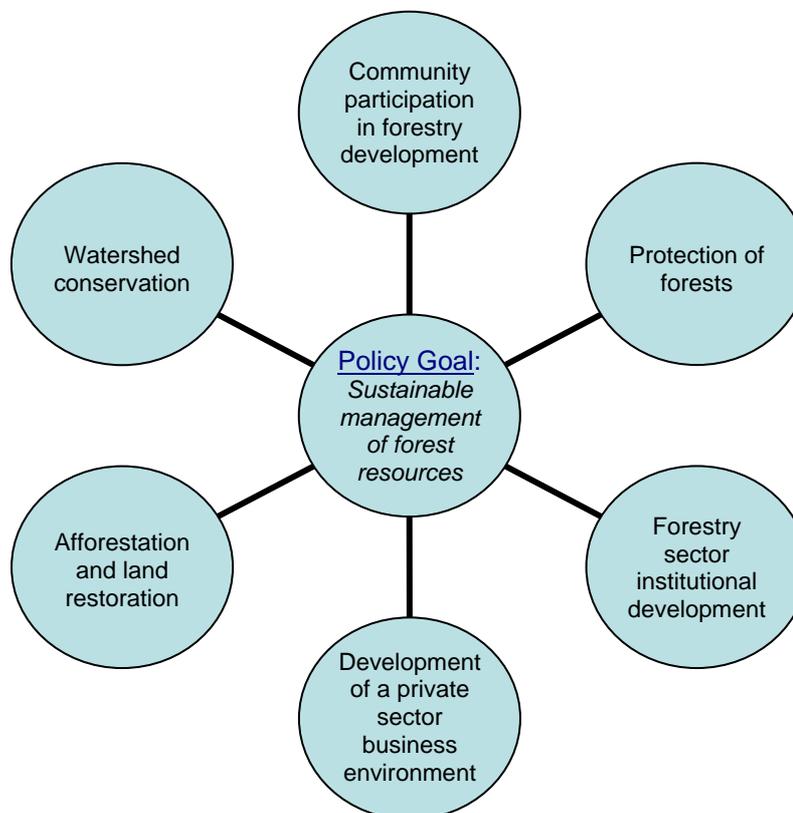
## **Forestry sector policy structure**

This forestry sector policy statement for Timor-Leste comprises a goal and six policy objectives. The goal will be implemented through the six objectives and a series of realistic, forward-looking strategies and new forests legislation that will be based upon Government approval of this forestry sector policy.

Objectives are interlinked and need to be considered as components of the whole forest policy. All objectives are equally important. The relationships between the goal and policy objectives are illustrated in Diagram 1.

It is desirable that this policy be reviewed after ten years against the achievements and other circumstances prevailing at that time.

**Diagram 1: Relationships between the Forest Policy Goal and Objectives**



## Goal of Forestry Sector Development

### Preamble

Forests are important and are valued by societies throughout the world from various points of view, most often for maintaining landscape stability, for wood, water and food supplies and as an energy source. More than 90 percent of the world's 1.2 billion people live in poverty and depend on forests for some part of their livelihoods. 900 million of the poorest people live within the Asia and Pacific region and since most live in rural areas, the region's forests have an important role in helping to sustain their basic needs and maintain their quality of life.

This pattern of heavy community dependency on forests also occurs in Timor-Leste. More than 80 percent of the population of Timor-Leste depends upon agriculture for subsistence, for both wood and non-wood forest products and for fuel and shelter. Forests provide materials for house building, fruits, leaves and other products for food for people and animals, and provide income from the sale of locally produced goods.

Forests are vital as a source of fuel and it has been estimated that an average household uses up to 24kg of wood per day for cooking. It is regarded as a 'free' fuel that can be produced for the cost of labour and transport. In many localities there is no low-priced alternative fuel and kerosene, widely used in the past, is now relatively expensive as a cooking fuel.

A key feature of this forest policy for Timor-Leste will be to achieve an integrated landscape-based approach to sustainable forest resources management through the implementation of objectives and strategies aimed at achieving the most appropriate balance between conservation and environmental protection, the

production of wood and non-wood forest products for national economic development and meeting the needs of poor and vulnerable people who depend on forests for survival.

Of particular importance is the maintenance of sustainable livelihoods for communities, the reduction of poverty, developing a lasting basis for community participation in all aspects of forestry and developing a private sector business environment.

This policy is consistent with the vision expressed in the National Development Plan to have a sustainable, prosperous and competitive forestry industry (as well as agriculture and fisheries industries) by 2020 that will support improved living standards for the people of the nation.

**The goal of forestry sector development is the sustainable management of forest resources and watersheds to provide environmental, social and economic benefits to the people of Timor-Leste.**

### Protection of Forests

**The policy objective is effective protection of the ecological integrity and biological composition of not less than 70 percent of the area of forests by 2020. Protection of forests will facilitate sustainable forest management, preserve and maintain their ecological, social and economic values especially for sustainable livelihoods and the economic development of communities, the reduction of poverty, and for the benefit of the nation.**

The protection of the nation's forests and their ecological services is a fundamentally important aspect of land management for without effective and lasting forest protection little can be achieved in respect of other aspects of the forestry development. It is a key feature of this policy and a challenge for land and forest management that directly affects economic growth of the country, the alleviation of poverty and the stability and enhancement of agriculture in most localities. Effective forest protection contributes to improved food self-sufficiency and the maintenance and enhancement of water flows in many rivers and streams.

Degradation of the nation's forests is serious in mountainous localities and is causing damaging erosion of soil and rock and the aggradation of detritus in riverbeds. It is having an adverse effect on watershed condition – that is linked directly to water supplies for irrigation, and therefore to food security – and it weakens the potential for producing timber and fuelwood and limits the ability to harvest non-wood forest products. Forest degradation also leads to significant loss of biodiversity (including loss of ecosystems and habitat) that can undermine the food security of forest communities.

Forests have the potential to greatly increase their value to Timor-Leste if restored and supplemented by intensively managed plantations. However, effective forest protection is a central feature of forest policy if this aspect of sectoral development is to be achieved. Several distinctive, unique and globally threatened examples of plant ecosystems and animals, especially birds<sup>2</sup>, occur in Timor-Leste and effective long-term conservation of them is important.

#### Strategies:

1. To protect all forests from damage or loss through programmes that will empower, engage and involve communities to manage forest land, through public relations and education activities, the prevention and physical control of wildfires and reduced livestock grazing. Reduced shifting cultivation and other human

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<sup>2</sup> Six globally threatened bird species are present in East Timor: Timor Green Pigeon (*Treron psittacea*; endangered), Timor Imperial Pigeon (*Ducula cineracea*; endangered), Timor Black Pigeon (*Turacoena modesta*; vulnerable), Wetar Ground-dove (*Gallicolumba hoedtii*; endangered), Yellow-crested Cockatoo (*Cacatua sulphurea*; critically endangered) and Timor Sparrow (*Padda fuscata*; vulnerable).

- activities, and encouraging restraint over the cutting of forest vegetation for fuelwood are equally necessary. The aim is effective protection of the ecological integrity, biodiversity and biological functions of not less than 70 percent of the forest area by 2020.
2. To authorise and provide secure rights to rural communities under new forests legislation to protect, afforest, restore, utilise and undertake such other activities that will contribute towards forest protection, sustainable forest management, the reduction of poverty, watershed management and other policy objectives.
  3. Customary land and forest usage rights, customary land management approaches and customary village (suco) boundaries will be determined and legally recognized under Land Law 01-2003 and new forests legislation as a basis for defining forest ownership and forest management responsibilities.
  4. Priorities for the protection of forests by geographic location and ecological classification will be determined in a participatory manner by Government with district authorities not later than 2008. Priorities will be based upon a consideration of regional and district development considerations and scientific evidence for watershed stability, erosion hazards, water yield priorities in rivers and biodiversity conservation. Prioritisation is proposed because limited resources are unlikely to allow a nation-wide approach towards forest protection to be achieved. Specific implementation activities and targets:
    - a. All lands where forest protection and management arrangements have been concluded with forest communities will be surveyed and mapped, together with the publication of maps of such land. Particular attention will be directed towards the protection of sacred areas of forest.
    - b. Surveyed and mapped forest land, but excluding land of forest communities, will be physically defined by the end of 2020 through the demarcation of forest boundaries.
    - c. Working arrangements for undertaking cadastral surveys and land definition will be determined through consultation by Government with the concerned local communities.
  5. Specific forest protection and management initiatives that may be financially supported by Government with forest-dependant communities will be based upon the provisions of new forests legislation and, where appropriate, of existing land and other laws relating to property and citizens rights.
  6. To create the legal category of Protected Natural Areas (that can include National Parks) under new forestry legislation over which the Government will have full authority to exercise its powers in participation with affected rural communities for the protection of unique, scientifically distinctive natural ecosystems, landscapes and other natural features. Specific implementation activities and targets:
    - a. Cadastral surveying and mapping of Protected Natural Areas will be completed not later than 2020 together with the publication of maps of such land.
    - b. Protected Natural Areas will be physically defined on the ground by the end of 2020 through the demarcation of boundaries and notices identifying such land.
  7. To protect forests and Protected Natural Areas from unlawful harvesting of wood and from unauthorised grazing by livestock. Unlawful harvesting of logs and other forest produce and unlawful grazing of livestock will constitute forest offences and will be punishable at law under the provisions of new forests legislation.
  8. To provide the Chief de Suco of villages with legal authority under new forest legislation for enforcing forest protection arrangements.
  9. To establish a core of volunteer forest wardens in rural communities who will provide assistance to people on public relations and forest protection matters.
  10. To raise awareness of the national and regional importance of effective and lasting protection of the nation's forests, watersheds and more generally of sustainable forest management and environmental conservation through taking the lead to form an inter-departmental working group with education, environmental, natural resources, energy and development ministries.
  11. To strengthen the legal basis for environmental conservation through concluding multilateral environmental agreements, e.g. the Convention on International Trade in Endangered Species of Wild Fauna and Flora.
  12. To protect forests and other terrestrial ecosystems from damage or loss that may be caused by pests and weeds. The NDCF will cooperate with other government agencies to develop a detailed weed and pest management strategy by 2008.

## Community and Private Participation in Forestry Development

The policy objective is harmonious and effective participation of forest communities and other private sector groups with the Government by the end of 2010. Effective community participation will provide a lasting basis for forestry sector development, including the implementation of programmes for forest protection, conservation, afforestation, sustainable forest management and the development of new forest enterprises and industries.

A specific policy objective is the award of long-term land use rights to all forest-dependant communities by the end of 2010.

Public participation in the management of the nation's forests using to the greatest extent practicable the customary land and forest protection methods that are understood and to some extent respected is a wish of forest communities. A survey of rural communities that was undertaken as part of the process of formulating this forest policy has shown a preference for the use of customary land and forest management arrangements.

Acceptance of community participation as a feature of policy is expected to lead towards the constructive participation of rural communities in forest protection and in the implementation of other aspects of this policy. It will progressively lead to a firm sense of rural community identity, ownership and managerial responsibility of forest resources that will also contribute towards improved forest protection and production. The skills and capacity gained through this approach can also be applied to other sectors of rural development and can therefore contribute to the overall development of rural land and communities. A form of community participation in agroforestry is firmly understood and established in respect of the management of the nation's coffee crops, the most important agricultural industry in the country.

Elsewhere in Asia community forest management, forest-user groups, forest protection committees, forest guardians and joint forest management committees are successful models that have contributed towards the promotion, participation and benefit sharing by local stakeholders in the implementation of various forest management and protection activities.

Community participation in all aspects of forest establishment, protection and utilisation is consistent with government policies of private sector involvement in sectoral development and it will contribute over time towards improved forest productivity, to higher incomes and to higher employment within villages. It will be adopted as an important policy objective in the development of the forestry sector in Timor-Leste.

### Strategies:

1. To award long-term land use rights under the provisions of Land Law 01-2003 and the new forests legislation to local communities, or to individual families or other stakeholders, not later than the end of 2020 that legally recognizes customary community land and forest usage rights (*Tara Bandu*), customary village (suco) boundaries and land management practices. Villages (sucos) to whom long-term land use rights are granted will be registered as legal entities under the provisions of new forestry legislation.
2. To negotiate and conclude mutually agreeable arrangements of cooperation, participation and forest management (including for forest protection) between the Government and all rural communities by the end of 2020. Forest cooperation and management agreements will enable a positive sense of community association with forests to develop that will lead to effective and sustainable protection, management and utilization of forests and Protected Areas. This will be achieved by providing the authority to communities to effectively manage and control their forest resources.
3. Community participation in forestry development shall be based upon the strategy of enabling communities to undertake protection, management and other forestry responsibilities rather than enforcing them to do so. Thus, the policy will enable rural communities to improve their own livelihood and the condition of forests in their vicinity by removing any constraints that inhibit them from doing so. The role of the government will be to support and facilitate communities in these efforts.

4. Customary mechanisms for the resolution of land disputes between communities will be recognised. Legitimate and effective authority under land dispute resolution legislation and new forests legislation will be provided to that will enable customary land disputes to be resolved. Where forest use and management disputes are unable to be resolved using customary arrangements then disputes shall be resolved under the appropriate provisions of statute law, or decrees.
5. To recognise that the benefits of community forestry will be retained by communities (in a community managed account, subject to independent annual audit) who will be encouraged to invest their funds in new forest management activities and for local community development. The revenue from forest produce that may be sold by rural communities will not be subject to taxation by the Government. Taxation would be inconsistent with the objective of alleviating poverty amongst rural communities, it is a disincentive for new investment in forest and agroforest establishment and protection by rural communities and tax collection is expected to be impracticable.
6. To develop in consultation with the local communities, community forestry regulations under the authority of new forests legislation that will provide long term use rights, or ownership of forests.
7. To ensure that community forests are not converted to other forms of land use that would be in conflict with the sustainable management of such forests.
8. To advise all villages not later than 2007 through notices and village meetings of the scope, provisions and implications of new forest policy as a part of an inclusive approach towards the participation of rural communities in the implementation of forest policy.
9. To demonstrate sustainable and sedentary use of forest land for food production where this is ecologically achievable using customary land management systems whilst also securing forest restoration, watershed protection and biodiversity conservation aims. This will be achieved through providing appropriate technical, managerial and marketing advice to rural communities and on-the-ground demonstrations of new field practices.
10. To discourage shifting cultivation of forest land by forest-dependant communities through the introduction of technically improved land and forest management practices that will lead to ecologically acceptable food production and to forest conservation. This will be achieved through technical extension services provided by the NDCF, linked to thoughtfully designed and carefully established demonstrations of improved management practices.
11. To develop community forestry guidelines by 2008 based on knowledge and experience gained on a pilot scale to support the wider use of this approach.
12. To document and publish customary knowledge about forest protection, dispute resolution, forest management and non-wood forest products by the end of 2008 in order that a collective body of customary knowledge and experience can be shared amongst the wider community for consideration in a future review of forest policy and management programmes.

## **Watershed Conservation**

The policy objective is long-term sustainable conservation of watersheds not later than 2020 in order to maintain and enhance natural water flows, to maintain high water quality and to minimise flooding and the erosion of rock and soil.

Emphasis will be placed upon the restoration of 10 critically degraded watersheds having crucial importance in national development.

Timor Leste has a dramatic and rugged topography, dominated by the Ramelau Range. Slopes are short though steep (half the country has slopes of 40 percent or more), soils are shallow or non-existent and are susceptible to erosion. The rainfall pattern, particularly in the north, is strongly seasonal where long dry periods can be followed by intensive short rainfalls. This leads to high rates of natural and accelerated erosion. Deforestation, wildfires and over-grazing are thought to have further increased the susceptibility to erosion in

many localities. High levels of erosion decrease fertility, damage natural and constructed waterways and water storage facilities and also cause significant damage to the hydrological cycle.

A major policy issue concerning sustainable forest management is that many subsistence farmers are adversely affecting natural forests in watersheds through practising shifting cultivation on increasingly short cutting (or return) cycles, only a few years. As most upper watersheds are in steep topography, are geologically young and are unstable it is believed that aggressive shifting cultivation is a major cause of increased soil and rock erosion and is also affecting river flows and water quality. In turn these effects have direct impacts on forest stability, food security and influence government's ability to alleviate rural poverty.

Presently there is little reliable data about erosion, the magnitude of the loss of conservation benefits and the cost to the nation of damaged watersheds. International experience indicates that effective and sustained efforts to maintain and rehabilitate watersheds are a fundamentally important aspect of land and forest management policy that has direct and widespread environmental, social and economic benefits. Emphasis will be placed upon the restoration of 10 critically degraded though nationally important watersheds<sup>3</sup>.

#### Strategies:

1. To achieve effective protection of all forests, savannah woodlands and grasslands not later than 2020 from damage or loss from wildfires, shifting cultivation, unlawful logging and unlawful settlement through a combination of actions that will include public relations, empowerment of rural communities to protect and manage forest land, education of rural and urban communities where these approaches are practicable. Prosecution under the provisions of new forests legislation will also be taken where serious forest protection offences occur.
2. Emphasis in forest protection will be placed upon the restoration of 10 critically degraded watersheds. The focus on conservation should be aimed at increasing public awareness, development of a framework for management of watershed areas, protection and conservation of biodiversity.
3. Priorities for the protection of watersheds will be determined not later than 2008 based upon a consideration of regional and district development priorities, socio-economic considerations, watershed stability and erosion risks and hazards, water yield in rivers and biodiversity conservation.
4. The deliberate lighting of fires that endanger the extent, structure and composition of forests and grasslands in watersheds, particularly forests in watersheds where high priority conservation values are at risk, will constitute an offence and will be punishable at law under new forests legislation.
5. To promote and encourage cooperation between rural communities and the Government through empowerment of rural communities under provisions of new forests legislation, technical extension services, agroforestry and forest management agreements that can contribute towards effective watershed protection.
6. To promote ecologically realistic forest restoration and mountain closure programmes in all classes of forestland using new planting, reforestation and natural regeneration methods and economically realistic incentives through the application of integrated watershed management with agriculture, agroforestry, horticulture and fisheries management.
7. To cooperate through an inter-agency working group with the Ministry of Natural Resources, Minerals and Energy Policy, and the Ministry of Public Works in integrated water resources management.
8. To plan, arrange, budget and undertake research programmes of high priority watershed conservation issues that will support sustainable forestry management and poverty alleviation. Specific research activities will be planned and initiated between 2006 and 2012 on the following topics:
  - a. Studies of the environmental, social and economic impacts of soil and rock erosion, including rates of erosion, in selected parts of priority catchments. A component of these studies shall be to determine the restoration action required, evaluation of the costs and benefits of long-term watershed restoration, and the impacts on local communities.
  - b. Revegetation studies in selected severely eroded catchments, including changes in biodiversity following mountain closure and protection of catchments, costs and an evaluation of benefits.

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<sup>3</sup> Lacro, Loes, Caraulun, Seical, Tavera, Irabere, Comoro, Tono, Sahe and Nunura watersheds.

- c. Hydrological studies in selected catchments (changes in natural water flows and of the periodicity of water flows) and hydrological relationships with erosion rates and erosion control.
- d. A study of the physical, social and economic benefits that can be achieved to the nation through investment in sustainable watershed conservation and to identify geographic priorities for watershed conservation.

## Afforestation and Land Restoration

The policy objective is afforestation and restoration of degraded land to improve watershed and coastline protection, maintain and expand wood resources for energy production, for building construction, furniture and craft manufacture, for fruit and other non-wood products, to complement agricultural and horticultural land uses and for enhancing landscape values.

A specific policy objective is to produce 50 percent of the nation's sawn timber supply from locally grown forest plantations by 2040 for building construction, furniture manufacture and other uses of timber.

Afforestation, including the restoration of degraded land, is the single most important managerial step that can be taken in forestry development leading towards the formation of new forest resources, irrespective of the objectives of management. If soundly planned and managed, planted forests contribute in a positive manner, economically, environmentally and socially, towards sustainable forest management and for helping to achieve food security. They can play a critical role in sustaining the health of the environment by conserving biological diversity, contributing towards food security, maintaining clean water resources, providing low cost, renewable energy and helping to mitigate climate change.

Where afforestation through tree planting is undertaken for the production of wood it makes an extremely valuable contribution towards the formation of resources having substantial economic, social and far-reaching environmental benefits. The benefits of afforestation and reforestation are especially high in watersheds. The forests of Timor-Leste are seriously degraded in most localities and non-existent in others. Forests have been and continue to be heavily relied upon for the production of woodfuel, especially for use in Dili and other cities.

The extent and severity of forest degradation precludes significant production of building timber that is required for a growing economy. The country is not self-sufficient for timber and must rely upon its importation for construction and other purposes. It is essential that an enabling environment be introduced and new investment be attracted in coming years that will lead towards greater self-sufficiency in wood supplies for general building purposes and for the production of higher value species for furniture manufacture and craftsmanship.

At a global level plantation forests in 2000 amounted to 187 million hectares, or about 5 percent of global forest cover and a little over 1 percent of global land-use. Plantation forests provided 35 percent of global, industrial roundwood supply in 2000 and it is expected that this will increase to 44 percent by 2020.

The demand for all types of forest products is increasing. An ADB forest policy paper<sup>4</sup> suggests that the Asia-Pacific region's population is projected to increase from about 3.3 billion in 2000 to an expected 4.4 billion in 2015 and that average per capita income will need to grow from 3 percent in some sub-regions to as much as 7 percent in others to achieve national poverty reduction targets. If current patterns of wood consumption and processing efficiency are maintained then regional Asian demand for wood products (logs, sawn timber, poles, pulp, paper, veneers, fuelwood) would increase from the present 1.2 billion cubic metres to about 3.8 billion cubic metres. The growing cycle of trees is relatively long. If there is inadequate new investment in afforestation it will be difficult for wood supplies to be available for new construction and other needs in Timor Leste at reasonable and affordable prices in coming decades.

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<sup>4</sup> Asia Development Bank – Forest Policy (working paper), June 2003, ADB, Manila.

Since the 1980s when the Asia-Pacific region was a major exporter of wood products it has since become a net importer of wood products. As its forest-resource base continues to decline the region now imports almost 20 percent of its annual forest product needs, and population growth will add to future demand for forest lands and products, resulting in a further decline in the forest resource base and possibly to higher prices for wood.

As an important part of this forest policy a specific afforestation objective will be to produce 50 percent of the nation's timber supply for building construction, furniture manufacture and for other uses from locally grown forest plantations and from community forestry and agroforestry programmes by 2040. A consistent afforestation programme will provide sustainable employment and incomes, especially for rural communities, and will have far-reaching environmental benefits for the whole of society.

There is special concern over the decline in sandalwood resources and the implications for loss of genetic diversity in this valuable species. Sandalwood has been harvested from Timor for more than 1,000 years and, of all the forest products of Timor-Leste, it may offer the best prospect for profitable forestry activity. A part of forest policy will be to address illegal harvesting, to study how and under what ecological conditions fuelwood, sandalwood and redwood can be established as forest or agroforest crops, and establish marketing arrangements that maximises the return to individual people and to the nation. Afforestation of sandalwood and the establishment of commercially-based fuelwood crops will provide rural employment in the short term and attractive financial returns to rural communities and other investors.

High and possibly increasing demand for fuelwood cut from natural forests for household cooking and commercial baking may supply as much as 90 percent of the national consumption of energy. Reliance on fuelwood, especially in urban areas, has increased sharply since the removal of the kerosene subsidy in 1999 thus placing a high demand on forests, in particular near towns and cities. The establishment and commercial management of plantations of fast growing trees specifically to grow fuelwood, especially near Dili, is a practical response to this problem in order to relieve pressure on natural forests and to help conserve watersheds.

#### Strategies:

1. To promote ecologically realistic programmes of afforestation through new planting, reforestation, restoration (enrichment planting, mountain closure) and natural regeneration in order to optimise the productivity of natural forests in watersheds, on coastlines and in forest plantations.
2. To produce 50 percent of the nation's timber supply for building construction, furniture manufacture and for other uses from locally grown forest plantations by 2040. This will be achieved through (a) providing appropriate technical, managerial and commercial (marketing) advice (extension services) to rural communities in nursery management for raising of high quality seedlings, provision of tree seed, tools, (b) ensuring beneficiaries are clearly identified, (c) training of officials and rural community personnel in forestry and agroforestry methodologies, and (d) ensuring that families will be able to harvest trees planted by them and will be able to retain the cash value of the trees when they are sold.
3. To undertake inventories of specific wood and non-wood forest resources, not later than 2008, in order to provide a technically useful foundation of forest resources information for reliable and effective long-term planning of sustainable forest management. Forest inventories may include surveys in specific target localities or more widely, of the area and volumes of selected tree species, the ecological condition of forests, biodiversity surveys, the distribution and nature of non-wood forest products or for other specific objectives.
4. To provide rural communities and other stakeholders, as appropriate, with access to markets and advice about marketing of forest products that can contribute towards the implementation of afforestation and reforestation objectives.
5. Where it is necessary to plan and coordinate rural community afforestation and reforestation activities the NDCF will, in cooperation with rural communities, undertake forest management planning, including zoning, to determine where afforestation and related silviculture is appropriate from ecological, physical, social and economic viewpoints. This will be achieved by a participatory approach involving concerned rural communities.
6. To promote cooperation between rural communities and the Government through the allocation of long-term land use management agreements and utilisation rights for afforestation, utilisation and other aspects of forest protection and management.

7. To promote community participation in afforestation and forest management activities, including the participation of school students.
8. To plan, arrange and budget for afforestation on land where this is in the national or regional interest for watershed protection, energy production or industrial wood production.
9. Specific attention will be directed towards the production of sustainable supplies of fuelwood through afforestation to satisfy the high demand in Dili and other cities for domestic fuelwood for cooking, baking and other energy needs. This will be achieved (a) through concluding contractual arrangements with interested rural communities or commercial investors for the production of fuelwood using short-rotation high performance tree species, and (b) consideration of the design and introduction of system of licencing of firewood producers as an administrative step towards the control of illegal fuelwood cutting.  
The aim of this strategy is to quickly reduce the harvest of fuelwood from natural forests and to improve forest protection in watersheds. A target production of 5,000 tonnes of plantation grown fuelwood annually for Dili from 2012 is proposed. The NDCF will coordinate with other Government agencies in regard to:
  - a. The introduction of energy-saving woodfuel stoves in consultation with rural communities, and
  - b. The formulation of national policies for the development of alternative (non-wood) energy sources.
9. To promote and encourage the planting of shade trees, palms and small amenity woodlands in and near Dili and other cities, including on coastlines, to create shade and scenery that can be enjoyed by urban residents and to increase scenic appeal for tourists. Particular attention will be placed on coastline planting of shade trees and palms near Dili not later than the end of 2009 to supplement existing shade trees.
10. To plan, arrange, budget and undertake research programmes of high priority forest establishment, management and forest utilization issues that will support sustainable forestry sector development, poverty alleviation, employment and income generation. Specific research activities will be planned and initiated between 2006 and 2012, using donor support where appropriate, on the following topics:
  - a. Study and resolution of forest establishment problems arising during implementation of forest plantation, agroforestry and community forestry programmes by rural communities.
  - b. (i) A study of the technical constraints and other issues concerning the establishment and profitable management of fuelwood plantations near Dili (including species selection, land and site requirements, forest crop establishment, silviculture, harvesting, economics of fuelwood cropping).  
(ii) A study of fuelwood consumption and estimated forward demand will be undertaken in consultation with energy planning authorities in order that fuelwood afforestation can be planned.
  - c. Study and documentation of 'best practices' in forest establishment, silviculture, protection, management and utilisation of timber and energy forests and of agroforestry crops.
  - d. Study of the issues constraining effective sandal wood management (including distribution surveys, plant protection requirements, silviculture and genetic studies).
  - e. Study of the issues constraining effective teak forest management (including silviculture, productivity studies, wood quality and utilisation studies, and marketing opportunities).
  - f. Study of non-wood forest products (including distribution surveys, horticulture and silviculture studies, economics of NWFP production). Specific attention will be directed to candlenut studies but not to the exclusion of other species.

## Development of a Private Sector Business Environment

The policy objective is the development and maintenance of a private sector-based business environment for profitable forest ownership and the management, production, utilisation and marketing of forest products, especially for the alleviation of poverty amongst rural communities.

As a policy objective rural communities will be encouraged over time to acquire the knowledge, skills, experience and confidence to manage, utilise and market forest resources as private forest owners.

Successful private sector development is a key driver of economic growth, employment and poverty reduction. The National Development Plan stresses that, in the short-term, a principal role of government will be to provide the best possible enabling environment for private sector development. A critically important requirement for poverty reduction that is expressed in the National Development Plan is to enhance opportunities in the private sector where growth and employment can be achieved in manufacturing, construction, trade, transport, tourism, and many domestic services. Priority policies and legislation are being formulated to improve the private sector and the ability of Timor-Leste to sustain and benefit from domestic and foreign investment.

Private sector, market-oriented economic development will encourage and enable investors to contribute towards the establishment, protection, management and marketing of a range of forest resources. An attractive private business sector environment will include favourable legal arrangements for the use of land and favourable fiscal, finance and trade policies. Over time and as their knowledge, skills and experience increases rural communities will be encouraged to become active participants in the ownership and utilisation of private sector-led forestry sector development.

### Strategies:

1. To encourage private sector investment in forestry development, in forest utilisation and in marketing through appropriate legal arrangements (regulatory, licencing, leases, contracts), banking facilities (loans) and fiscal incentives (tax incentives, depreciation). The NDCF will cooperate with other government agencies to secure favourable legal, economic and trade policies for the development of a private sector business environment.
2. To ensure that policies concerning private sector investment and trade, including taxation, duties, depreciation of assets, licencing and insurance, do not have perverse effects on forestry development that are inimical to the achievement of sustainable forest management, forest protection, conservation and profitable forest utilization programmes. This will be achieved through periodic inter-departmental consultation by NDCF staff.
3. Where it is ecologically appropriate to do so and in a manner that is consistent with the expressed wishes of local communities to promote the efficient harvesting and the profitable utilization of all types of wood and non-wood forest products through technical extension and education, financial and economic incentives (including a minimum of regulations).
4. Forest communities will be encouraged over time to acquire the knowledge, skills, experience and confidence to manage, utilise and market forest resources as private forest owners. This will be achieved through carefully designed and implemented training and education programmes, extension services and through support provided under the strategies set out in section 1.
5. New investments in private sector forestry development will be considered under the commercial, trade and other laws that determine and regulate investment and business management in Timor Leste. Preferential contractual arrangements through forest concessions will not be a part of forest policy for encouraging private sector business development in forestry and forest industries.
6. To promote domestic and international trade of added-value forest products and to encourage the profitable utilisation of tree species that are presently under-utilized, both technically and commercially by applying the strategies set out in section 1.
7. To promote, in cooperation with the Ministry of Development, the added-value processing of commercial

species by the private sector for export markets by applying the strategies set out in section 1. Exports of unprocessed logs and wood of sandal wood (*Santalum* species), redwood (*Pterocarpus* species), ebony (*Diospyros* species), suren (*Toona* species) and teak (*Tectona grandis*) will be prohibited.

8. To promote the efficient production of locally-grown sawn timber for domestic building construction and furniture manufacture and the profitable processing and marketing of non-wood forest products, especially products having high-income generation benefits to forest communities, by applying the strategies set out in section 1.
9. To encourage rural communities in association with Government tourism authorities, and the hotel and travel industry to plan, promote, arrange and implement eco-tourism opportunities to localities having high scenic, cultural, historic and distinctive ecosystem values. There will be an equitable sharing of the benefits of eco-tourism amongst the stakeholders.

## Forestry Sector Institutional Development

The policy objective is to develop managerial, technical and administrative capacity and to maintain and develop forestry sector institutions in order that all forest policy objectives and specific programmes will be effectively designed, implemented, managed, monitored and controlled.

A specific short-term objective is to at least double the number of staff holding tertiary qualifications in forestry and natural resources management by 2010, compared with the graduate staffing level in 2005, and to increase staffing of management, operational and extension staff by 150 percent over the same period.

A high priority of the government that is expressed in the National Development Strategy is to establish government capabilities and the institutions required to pursue national development priorities. Notwithstanding a strong commitment by staff of the NDCF towards the implementation of forestry sector development it is also recognised that staff numbers are low, few staff have tertiary education and, in general, experience is limited.

Upgrading the institutional capacity in the NDCF is a primary need and a high priority for improved forestry sector development. The shortfall in human resources capacity involves staff training and experience as well as equipment and facilities. While in-service training programs will partly address the staffing issue, supplementary mentoring by skilled advisers having sympathetic and understanding personalities would also fast track an improvement in institutional capability especially for developing technical capacity.

A concerted effort and funding is needed to strengthen graduate staffing not later than 2010 in order to provide a knowledgeable, diverse and increasingly experienced team of people who will comprise the national forest service and who can confidently implement the important programmes of forestry development in the years ahead. Of particular importance is the compelling need for graduates who will have the knowledge, skills and confidence to guide the implementation of the various objectives and strategies comprising this forestry sector policy. Training of operational staff in a range of skills and vocational training, especially of village personnel and of recently appointed forest guardians, are equally important requirements.

### Strategies:

1. To develop and maintain a national forest service that will be adequately staffed with suitably trained personnel to administer this forest policy and specific forestry development programmes.
2. To provide opportunities for long-term tertiary education of selected personnel in forestry and related topics at overseas universities. A specific short-term objective is to at least double the number of staff in the NDCF holding tertiary qualifications in forestry and natural resources management by 2010, compared with the graduate staffing level in 2005.

3. Through appropriate budgeting by the Government to maintain a level of funding and investment in the forestry sector, including for the operation of the national forest service, that is adequate to implement all of government's forestry sector policies.
4. To expand technical and managerial capacity through the design, budgeting, organization and implementation of training and education programmes of Government and non-government personnel in all aspects of sustainable forest management (including community forest management), protection, afforestation, extension, utilization and trade. A specific short-term objective is to increase staffing of management, operational and extension staff by 150 percent between 2005 and 2010.
5. To progressively train NDCF staff, particularly in districts, as professional extension advisers and management support personnel who can provide technical, utilisation and marketing advice to forest-dependant communities in a sympathetic manner, as opposed to having the primary regulatory roles of policing and licencing.
6. Where it is practicable to do so to encourage and apply adaptive learning methods, including through monitoring of operational activities, to ensure continual institutional development at all levels of forest management and administration. To build capacity of all stakeholders, and especially for rural communities, through 'action-learning' activities and extension programmes in environmental protection, watershed protection, afforestation, sustainable agriculture and agroforestry.
7. To build on and strengthen institutional arrangements associated with customary land management practices through adaptation into governmental administrative procedures and manuals.
8. To establish effective coordination and cooperation arrangements amongst related sectors of the economy that influence the forestry sector, including international institutions and companies concerned with forestry development. This will be achieved through inter-departmental consultations, discussions with all forestry sector stakeholders and discussions with international institutions.
9. To ensure that the basic goals of sustainable management of forests, protection of forests and watersheds are effectively reflected in the Government's development plans and institutional structures in order to achieve responsive implementation of forest policies. This will be achieved through appropriate inter-departmental consultations and administrative action.
10. To coordinate and harmonise forestry and other sectoral policies and activities in consultation with appropriate stakeholders, especially on issues of land and forest use planning, national development, laws and other legal issues, water and soil conservation, energy production, public works, education of young people at schools, commerce and trade, and marketing of forest products.