Our forest resources constitute an important national heritage from which we derive both economic and environmental benefits. These resources suffered a great deal during the South African occupation of our country, when a deliberate policy of uncontrolled plunder was encouraged, especially in the communal areas of the North and North-East. Indeed, no meaningful development activity was initiated in the sector during that era.

Our national forest resources satisfy the basic needs of our rural households for forestry products and are also a significant repository for biological diversity and perform critical erosion prevention, soil conservation, carbon sequestration and climatic regulation functions.

The Namibian Forestry Strategic Plan is a major milestone in our endeavours to ensure the sustainable use and development of our national resources. It provides strategic policy guidelines for the forestry sector, analyses the capacity of the national resources to meet the demand for forestry products, elucidates the challenges to sustainable forestry management in Namibia and guides the future development of the sector.

My Government is committed to the implementation of appropriate policies that will lead to the achievement of the full range of socio-economic and environmental objectives set for the forestry sector. In view of the limited success of the past command-and-control policies underlying forest reservation in containing deforestation, I am appealing to my fellow countrymen and women in their private capacities as members of various local communities to demonstrate their willingness to promote the efficient use, conservation and protection of our national forest resource base. I strongly believe that the strategy of community empowerment and the involvement of the private sector in the management and conservation of our national forest resources will enable us to attain desirable synergy between forest resource conservation and the objectives of economic growth in the long term.

It is my pleasure to express my sincere thanks and appreciation to the Government of Finland which, through the Ministry of Foreign Affairs, has provided technical and financial assistance towards the preparation of the Namibia Forestry Strategic Plan. I also wish to congratulate the Ministry of Environment and Tourism, and particularly the Directorate of Forestry, for successfully completing the preparation of this historic document.

I am confident that the successful implementation of the Namibia Forestry Strategic Plan will lead to greater community involvement in the management and conservation of our forest ecosystems and wildlife resources in the interest not only of rural communities,
but for the entire Namibia. I am hopeful that this will lead to better management of our natural forest resources, thereby enabling us to bequeath these resources to future generations.

In order to achieve the aim of the theme, and realise the essence of the Namibian Forestry Strategic Plan which can be summed up as, *Forest biodiversity for present and future generations*, we must all commit ourselves to making Namibia green again.

Sam Nujoma
PRESIDENT OF THE REPUBLIC OF NAMIBIA
AN OVERVIEW OF NAMIBIA FORESTRY STRATEGIC PLAN

I. Background

Prior to independence, the Namibian forestry sector was neglected. There was no deliberate intervention from the colonial government of the Republic of South Africa intended to promote forestry development. Immediately after independence, the Government of the Republic of Namibia created the Directorate of Forestry, as the lead public institution responsible for promoting sustainable forestry development. The donor community has supplemented Government efforts by sponsoring forestry development projects of varying orientation. These efforts have so far lacked a framework that would ensure efficient utilisation of scarce resources allocated to the sector, and consequently the sector’s maximum contribution to the national socio-economic development process.

The aim of preparing the Namibia Forestry Strategic Plan is to specify forestry objectives and strategies that will guide efficient programming of forestry development projects, within the framework of integrated national development. Strategic planning of the sector explicitly recognises the relations between forestry and the rest of the economy, and in addition forest-related global issues. Forestry sector must therefore assume the following responsibilities in the national economy:

- Satisfy national and international demands for direct and indirect benefits from forests.
- Contribute to fundamental objectives of socio-economic development, particularly with respect to; employment, income distribution, health and welfare.

Forestry must meet these objectives and at the same time, contribute to national sustainable development. It is therefore important that the demands for direct benefits from the forests are not met by non-sustainable exploitation of the national forest resources.

II. Preparation Of The Namibian Forestry Strategic Plan

A. The Process

The bottom-up process of formulating a comprehensive Forestry Strategic Plan as the basis for forestry sector development was initiated by the Directorate of Forestry in 1995. The process started by preparation of a national forestry research plan, which was soon followed by the preparation of a national forest management plan.

After participatory preparation of the research and management plans, a planning team was constituted in the Directorate of Forestry, to carry forward the process of preparing the Forestry Strategic Plan. The sector’s strategic planning by the team was carried out through a process which included regular meetings in the Directorate and two major forestry sector stakeholders’ meetings. The stakeholders meetings were attended by representatives from the Government, Regions, Farmers Unions, Non-Governmental Organisations, Private Sector, Media and International Community in
Namibia. The outcome of the stakeholders meetings was supplemented by mobilisation of further information from resource persons conversant with the Namibian forestry sector, that were contracted by the planning team. The four sources of information, namely: the research and management plans, planning team regular meetings, stakeholders meetings and the resource persons reports; constituted the basis for the formulation of a comprehensive Namibia Forestry Strategic Plan.

The preparation of the Forestry Strategic Plan was supervised by a task force composed of the following:

- Director of Forestry - Chairperson
- Representative of the National Planning Commission
- Director of Environmental Affairs
- Director of Resource Management
- Director of Tourism and Resorts
- Director of Lands
- Director of Resettlements and Rehabilitation
- Director of Planning in Agriculture
- Director of Extension and Engineering in Agriculture
- Director of Research and Training in Agriculture
- Director of Community Development

The main responsibility of the task force was to ensure that: a) the strategic analysis of the forestry sector was rigorous and well presented given the limitations of data, time and other factors and b) the Plan is positioned in the national policy for it to be effective and it constituted participatory planning of development in the forestry sector.

B. The Strategic Plan Framework

The aim of planning forestry sector development is to define the objectives for a revised national forest policy and the strategies to achieve these objectives. The starting point of planning the forestry sector development was the common goals of planning the national economy, and inter-sectoral goals relevant to forestry sector development. The latter goals that signify shared goal-setting at the sectoral level are particularly important, because they demonstrate the essence of integrating forestry into wider national goals and policies, and cross-sectoral cooperation required for successful implementation of the national forest policy.
The fulfillment of the sectoral goals will entail the following tasks:

- **Conserving the natural ecosystems for their biodiversity and other values.** Protection of the natural forests will ensure sustainability of the environmental services (conservation of soil, water and biodiversity) of forests for the welfare of the present and future generations.
- **Contributing to increased agricultural productivity through soil and water conservation.** Forests and trees on the farm help to conserve soil and water resources which are vital to agricultural production.
- **Supporting national efforts aimed at poverty alleviation and equitable development.** By promoting rural development, forestry programmes can contribute effectively to poverty alleviation and equitable development.
- **Protection of biodiversity and preventing climate change.** Conservation ensures some amount of forest growth which in addition to protecting the existing biodiversity, sequesters carbon to restrict potential climate change.

The achievement of the forestry sector goals, and the subsequent contribution of the sector to the achievement of the national objectives through the inter-sectoral goals is the responsibility of the stakeholders, who organise forestry development efforts. The most important stakeholders in forestry development in Namibia are:

- Farmers (particularly women who constitute 54% of the rural population)
- Local communities
- Non-governmental organisations
- Private enterprises
- Government of the Republic of Namibia
- International community

Individual stakeholders have been assigned the following responsibilities in forestry sector development:

**Farmers and local communities** should manage productive natural forests and plant trees on agricultural land, for provision of fuelwood, poles, posts, non-wood products and other primary forest products for which it is possible to obtain payment.

**Non-governmental organisations** should help farmers and local communities build up the capacity needed to manage forest resources on a sustainable basis. They should also help private entrepreneurs build up the capacity needed to establish and manage forest industries on a profitable basis.
Private enterprises should concentrate on the establishment of processing industries that should act as forest products supply incentive to farmers and local communities, as well as intensive forms of recreation and ecotourism.

Private institutional structures set up to administer farmers, local communities and private enterprises participation in forestry development should be favourable to the execution of policies aimed at supplying forest goods and services for which it is possible to obtain payment.

The Government through the Directorate of Forestry as the lead public sector institution in the forestry sector should be responsible for planning, programming, monitoring and enforcement functions. It should also: a) reserve and manage forests directly only for those environmental purposes which the private sector could not or would not carry out, e.g. watershed and biodiversity conservation and b) design politically and budgetary feasible incentives to induce the private sector to participate in Government sponsored forestry programmes.

**Directorate of Forestry Mission Statement**

To practice and promote the sustainable management of forests and other woody vegetation with the involvement of local communities, in order to supply products and services to enhance socio-economic development of Namibians, while maintaining and enhancing the other environmental and conservation functions of the resources.

The International community's role in the forestry sector is to amplify the financial resources, scope and number of Government programmes. Their support to development projects will essentially be discrete, short-lived and should not be expected to last forever. This support should be used as a criterion by the Government to prioritise Treasury investment in forestry programmes. For example, assuming a scenario of zero external financial support; the overall forestry programme that should be financed by Treasury should be composed of all projects that make a positive contribution to the process of domestic socio-economic development. This scenario represents the essential core elements of the national forest policy that should be implemented with available domestic resources. In the long-term, international community resources should only be expected to finance projects that produce global benefits such as, biodiversity conservation and prevention of carbon accumulation in the atmosphere that could lead to possible global climate change.
C. Inter-Sectoral Co-ordination

The stakeholder approach to the implementation of forestry programmes and projects will demand a high degree of inter-sectoral co-ordination on issues of; sustainable land management and environmental stability, farm forestry and extension, income generating activities, rural development, prevention of desertification, tourism, education and professional training. It is envisaged that co-ordination of implementation of the Forestry Strategic Plan will be undertaken by various committees at the National, Regional and District Levels.

The achievement of the objectives of national forest policy will depend on the forms of forestry to be developed and the programmes to be implemented in the sector.

III. Forms Of Forestry To Be Developed

A. Natural Forests

Based on land suitability maps and forestry inventory results, the Government in collaboration with the local people will zone communal forest areas into two functions: production forests and environmental forests.

Production forests will be managed by the local people, with the support of technical assistance from the Directorate of Forestry. Since the local people are in a more strategic position to manage these forests on a long-term basis, it is envisaged that the harvesting of forest products and services from the resource will constitute a powerful economic incentive for the local people to demonstrate the willingness and ability to protect and manage the resource on a sustainable basis. It has been emphasized that the responsibility of developing harvesting of products from natural forests should be increasingly allocated to women who often control gathering, processing and marketing of these products, but have few other opportunities of entering the cash economy.
Environmental forests constitute national strategic forests, and their management and conservation should be the responsibility of the Government mainly through the Directorate of Forestry. The management of these forests will mainly produce environmental public goods and external benefits that local people will not receive income compensation for their provision. This is why it has been recommended that the Government should maintain a high profile in their management for environmental purposes. Nevertheless, whenever it is envisaged that partnership with local communities, conservation non-governmental organisations and the private sector can contribute significantly to forest policy objectives, they should be involved in the management of national strategic forests through well designed management agreements.

B. Farm Forestry

Farm forestry will entail deliberate tree growing or management of natural tree stocks on agricultural land by farmers for provision of wood and non-wood products and environmental benefits associated with the presence of trees. Farmers will have to be induced to undertake tree growing by means of land tenure policies, forest legislation and Government extension services. The impact of these incentives on farmers tree growing behavior will be stronger, if good marketing links for forest products are in place. All institutional and market incentives provided by the Government and other agencies must therefore be designed to address the specific needs of farmers.

IV. Development Programmes

At the moment, Namibia has a poorly designed national forest policy and weak public forestry institutions. Investments in major forestry programmes should therefore be preceded by updating of the national forest policy and forestry public sector capacity building. Given the prevailing limitations, only four priority programmes have been proposed to implement the goals of forestry development. In addition, it has been recommended that implementation of these programmes should avoid the design of single projects dealing with many components and tackling several major issues. Rather, their implementation should adopt a long-term programme approach characterised by a series of actions and investment operations extending over a long time horizon. Pilot projects should also be used to develop new approaches for stimulating private sector and local community involvement in forest resource management and conservation. To ensure financial sustainability, new investments should, where necessary, incorporate an appropriate financing mechanism (e.g., forest fund, revenue sharing, or trust funds).

<table>
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A. Public Sector Forestry Capacity Building

At the moment, Namibia does not have enough qualified and experienced staff to implement the full range of socio-economic and environmental policy objectives set for the forestry sector. In addition, the Directorate of Forestry as the lead public agency in the forestry sector still requires organisational strengthening to reinforce its capacity to use its financial and staff resources more effectively. The Directorate of Forestry has therefore to undertake both human resources and institutional development, in order to ensure successful implementation of public forestry programmes. This will entail skills enhancement, procedural improvement and organisational strengthening. Skills enhancement will be achieved mainly through: a) strengthening the capacity of the vocational and technical forestry education programme at Ogongo Agricultural College and b) overseas training of the Directorate local staff. The focus of institutional development will be on the Directorate’s capacity utilisation and absorptive capacity, that should be achieved through national development of forest governance with appropriate support from technical assistance.

B. Community-Level Management Of Natural Forests

**Partnership in the management of natural forests for multiple use.** Involvement of local communities in management and conservation of forest resources is desirable for the purposes of environmental protection and for the increased production of forest products. This involvement is envisaged to contribute significantly to rural incomes, employment and environmental protection. Local communities are unlikely to accept management responsibility, however, without being allocated clear, long-term usufruct rights to the forest resources involved. In practice, this implies that Government should: a) grant custody of forest reserves to local communities or user groups, b) provide them with assistance to use it in a sustainable way for multiple benefits and c) grant them permission to extract royalties from outside users. Care has to be taken to ensure that management responsibilities (surface area, enforcement against outsiders, etc.) are realistically set and do not surpass the implementation capacity of the local communities.

**Appropriate framework for community-level forest management.** Most productive natural forests in Namibia are found in the communal areas. Although the communal land legally belong to the State, traditional authorities are responsible for the allocation of land use rights to individual household farmers, and specify simple rules regarding its use. However, traditional authorities common property resource management systems have been eroded by Government intervention, population growth and migration to such an extent that they can no longer provide an appropriate framework for community-level forest management. Therefore, the scope for community involvement should be determined by: a) the local context (especially the type and extent of natural forest ecosystem), b) the various productive and regulatory uses at stake and c) the structure and functioning of specific local communities. The process of devolving Government responsibility of managing natural forest should take place gradually and be subject to monitoring. Government should retain involvement in mediating in disputes local users cannot resolve, and protecting the rights of the disenfranchised groups such as women and the poor.
C. **Households Management Of Farm Forestry by Individual Households**

Communal areas experiencing population pressure are characterised by declining forest cover and tightly farmed landscape. In these areas, common property resource management has very little potential, as per capita benefits will be extremely low and transaction costs high. The most promising focus for local involvement in forestry is on the creation and maintenance of tree resources on farms. Farm forestry will ameliorate the shortage of basic forest products needs, particularly: firewood and fencing posts. In addition, it will contribute to reversing the declining trend in agricultural productivity by conserving soil fertility. The starting point of promoting farm forestry should be through forestry activities which already form an integral part of the household land use economy.

D. **State Management Of Environmental Forestry**

Management of dry watershed areas, unique natural forests ecosystems for biodiversity conservation and small patches of woodlands, will mainly produce public goods and external benefits that will not be captured by the provider. The Directorate of Forestry, in collaboration with other relevant Government agencies for natural resource management (e.g., Directorate of Resource Management and Directorate of Tourism and Resorts), should maintain a high profile in management of such strategic forests for environmental protection purposes. Nevertheless, whenever it is envisaged that partnership with local communities, non-governmental organisations and the private sector can contribute significantly to forest policy objectives, they should be involved in the management of national strategic forests through efficient management agreements. Local people or smaller user groups involved in the management of national strategic forests should demonstrate proven resource management capabilities.

V. **The Sequence and Content of the Strategic Plan**

The main aim of preparing the Forestry Strategic Plan is to ensure internal consistency in the implementation of forestry development projects within the sector, and link forestry to broader national socio-economic sustainable development objectives and establish the mechanisms for inter-sectoral coordination and collaboration. By rationalising forestry sector development priorities, it provides the basis for domestic and donor resource mobilisation. In addition, it will enable the Directorate of Forestry to orient future development assistance towards programme support and depart from the current assistance that is project oriented.

The strategy of the Plan is neither top-down nor bottom-up, rather; it is policy-oriented and direction-setting so that it spreads its influence in all directions. It is intended to be dynamic and valid for at least two decades, and should not therefore, be confused with operational plans that cover short time horizons and include more details. Strategic analysis of the following topics has been covered in the Plan:
• The current status of the forestry sector.
• The national capacity to meet the demand for forest products and environmental services.
• Challenges to sustainable forestry management and their proposed resolutions.
• Strategic decisions on future public management of national forest policy implementation.
• Forestry development programmes and their expected contribution towards the achievement of sectoral and national objectives.

VII. Implementing The Namibia Forestry Strategic Plan

The strategic plan will be implemented through investments in the four priority programmes. Their implementation have the following phases:

• Establishment of a detailed programme structure
• Assessment of resources
• Implementation
• Evaluation and programme management

Establishment of a detailed programme structure. The four priority programmes that are necessary to the achievement of forestry goals, are going to be considered in detail during programme formulation, breaking down each programme to the level of activity appropriate for controlling its implementation operations. To facilitate the monitoring and evaluation of the programme implementation, clear performance targets are going to be set and objectively verifiable indicators defined.

Assessment of resources. Resources required for the implementation of each programme and its various component activities are going to be assessed. A resource plan will be prepared for each programme. It will indicate physical and non-physical resources required for successful implementation of the programme.

Implementation. Consideration will be given to precisely what is needed to be done, by whom, and when. Special attention will be paid to the organisational structure for programme implementation, requisite management information and administrative systems. A performance and development system for the staff of the Directorate of Forestry will also be developed.

Evaluation and programme management. Periodic evaluation of progress is the last but vital phase in the strategic plan implementation process. The assessment will highlight whether there is a need for any amendments to the programmes and activities being implemented, or any modification in the programmes goals and strategies. Programme management will constitute a set of guidelines which focus on the practical steps involved in the development and implementation of the programme-based structure, and the related management systems. This will ensure that the Directorate of Forestry is able to implement the national forest policy.
ABBREVIATIONS AND ACRONYMS

CIFOR  Center for International Forestry Research
DBC    Development Brigade Corporation
DEA    Directorate of Environmental Affairs
DoF    Directorate of Forestry
DRM    Directorate of Resource Management
DTR    Directorate of Tourism and Resorts
LUEB   Land Use and Environmental Board
MAWRD  Ministry of Agriculture, Water and Rural Development
MET    Ministry of Environment and Tourism
MLRR   Ministry of Lands, Resettlement and Rehabilitation
NGO    Non-Governmental Organisation
NPC    National Planning Commission
OPM    Office of the Prime Minister
SADC-FSTCU Southern Africa Development Community - Forestry Services Technical Co-ordination Unit
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1. INTRODUCTION

1.1 Past efforts to develop the forestry sector

Early efforts

Forestry development in Namibia started at the beginning of the twentieth century when the role of woody vegetation in environmental protection was recognised by the German colonial government. The national forest policy that was developed emphasised nature conservation, particularly the protection of riverine forests. Although the national forest policy promoted environmental forestry, the dependence of the colonial economy on imported timber, led to the attempts to establish large-scale afforestation programmes based on a combination of exotic and indigenous species. The efforts in plantation forestry targeted the areas in Central parts of the country. However, poor results of artificial regeneration and the high establishment expenditures incurred made plantation forestry an unfeasible forestry development alternative. To cut down public expenditures on tree planting programmes, it was recommended that farmers should be encouraged to plant trees on agricultural land.

Post-war efforts

After the First World War, Namibia became a mandate colony of the Republic of South Africa. The interest in what constituted appropriate forest policy that was lively under the German colonial government disappeared. German forest legislation remained in force until 1925 when it was replaced by the South African new ordinance. In addition to the introduction of a new ordinance, the Executive Council of South West Africa contracted an expert from South Africa to evaluate forestry activities in the country and make proposals for future forestry development. The expert recommended the development of a forest administration, afforestation trials in Central and Southern parts of the Namibia and sand-dune stabilisation in Walvis Bay and Swakopmund. Poor forestry administration exacerbated by lack of qualified personnel constrained the implementation of most of the proposals recommended for forestry development. Starting from 1930 the policy of nature conservation gradually changed towards forest exploitation.

Recent negligence of forestry development

The policy of forest exploitation, especially in the communal areas, Tsumeb and Grootfontein regions that started in the 1930s continued unabated until Namibia became an independent nation in 1990. Lack of technical capacity to administer forest concessions led to uncontrolled forest exploitation. In the meantime, poor forestry administration constrained the initiation of any meaningful forestry development activities. Moreover, between 1975 - 1989, the country’s liberation struggle prevented the implementation of forestry development activities in large areas of Northern Namibia. Independent Namibia has now created a Directorate of Forestry, to carry out programmes that should implement the national forest policy.
1.2 Distribution of forest resources

Ecological zones

The growth and nation-wide distribution of the Namibian forest resources is very much influenced by the amount of rainfall received. On the basis of mean annual rainfall availability, the country is classified into four distinct ecological zones:

- *Desert region* receives less 100 mm of mean annual rainfall and covers 22 % of the total national land area.
- *Arid region* receives 100 - 300 mm of mean annual rainfall and covers 33 % of the total national land area.
- *Semi-arid region* receives 300- 500 mm of mean annual rainfall and covers 37 % of the total national land area.
- *Semi-humid region* receives 500 - 700 mm of mean annual rainfall and covers 8 % of the total national land area.

Deserts

Deserts occupy approximately 16 % (about 13 million ha) of the nation’s land area. The vegetation vary from the desert and succulent steppe in the Southern Coastal region, to shrubs and grasses of the arid areas around Etosha Pan and in river beds in the Northern Namib desert. This vegetation is not important from the point of view of wood production, but is of major importance for wildland habitat and domestic livestock grazing.

Savannas

Savanna vegetation occupy approximately 64 % (about 53 million ha) of the nation’s land area. They vary tremendously, from desert shrubs in the Eastern and Southern parts of the country which support large livestock and game populations, to Mopane trees in the North and North-East to Caprivi region.

Woodlands

Woodlands occupy approximately 20 % (about 16 million ha) of the nation’s land area. They vary from savanna trees and woodlands in the North-West, Caprivi strip in the North-Eastern and Waterberg Plateau in the South, and riverine woodlands (rich in plant and animal biological diversity) that constitute important dry season grazing, watershed protection; to large trees in the Erongo mountains.
1.3 Economic importance of domestic forest resources

Due to the harsh ecological conditions for forests growth, savannas and dry woodlands constitute the main forest resources in Namibia. These resources are important source of:

- firewood used by rural and low income urban households for cooking;
- construction timber (poles and posts) in the rural areas, particularly in the North and North-Eastern communal areas;
- food (fruits, nuts, edible caterpillars and birds) in the rural areas;
- materials for farm and household implements in the rural areas;
- crafts and medicine for subsistence and commercial consumption;
- fodder for livestock particularly, in the Central and Southern regions;
- wildlife habitat that forms the basis for tourism industry.

In addition, domestic forest resources contribute indirectly to arable farming through conservation of soil fertility and water resources. Table 1.1 on page 9 gives a summary of economic importance of selected Namibian trees and shrubs.

The Directorate of Forestry estimate the current total economic value of forest resources exploitation to be N$ 985.2 million per annum. A breakdown of this estimate into various common uses of forest resources is given in Table 1.2.

<table>
<thead>
<tr>
<th>Product</th>
<th>Main species</th>
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<tbody>
<tr>
<td>Construction poles</td>
<td>Mopane</td>
<td>383</td>
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<tr>
<td>Tourism</td>
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<td>Fences for crop protection</td>
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<tr>
<td>Firewood</td>
<td>Mopane, Acacia spp</td>
<td>131</td>
</tr>
<tr>
<td>Medicine</td>
<td>Various species</td>
<td>31.5</td>
</tr>
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<td>Kraals</td>
<td>Mopane</td>
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<tr>
<td>Charcoal</td>
<td>Various bush invaders</td>
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<tr>
<td>Crafts and implements</td>
<td>Various species</td>
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</tr>
<tr>
<td>Mahangu baskets</td>
<td>Mopane</td>
<td>12.4</td>
</tr>
<tr>
<td>Goat forage</td>
<td>Various species</td>
<td>9.5</td>
</tr>
<tr>
<td>Fencing poles</td>
<td>Mopane</td>
<td>6.6</td>
</tr>
<tr>
<td>Food</td>
<td>Marula oil</td>
<td>4.6</td>
</tr>
<tr>
<td>Basketry</td>
<td>Hyphaene spp</td>
<td>4</td>
</tr>
<tr>
<td>Commercial logging</td>
<td>Pterocarpus, Baikia</td>
<td>2.4</td>
</tr>
<tr>
<td>Mortar and pestle</td>
<td>Various hardwood</td>
<td>1.5</td>
</tr>
<tr>
<td>Beverages</td>
<td>Various species</td>
<td>1.5</td>
</tr>
<tr>
<td>Ornamental roots</td>
<td>Mopane</td>
<td>1.1</td>
</tr>
<tr>
<td>Carvings</td>
<td>Various species</td>
<td>1</td>
</tr>
<tr>
<td>Mopane worm forage</td>
<td>Mopane</td>
<td>0.5</td>
</tr>
<tr>
<td>Food</td>
<td>Mangetti kernels</td>
<td>0.2</td>
</tr>
<tr>
<td>Total Economic Value</td>
<td></td>
<td>958.2</td>
</tr>
</tbody>
</table>
1.4 Comparative advantages of the management of natural forests

The prevailing forest growth conditions in Namibia preclude the strategy of intensive natural forests management for industrial timber production. It is not possible to emphasise the management of the nation’s forests as a tool for supply of raw materials for traditional forest industries development (particularly large scale sawmilling and pulp and paper industry). However, appropriate conservation and management of the nation’s natural forests can definitely produce high environmental benefits. The strategy of natural forests conservation and management will also permit the uninterrupted production of specialised local forest products and the associated forest services. Therefore, the most important functions of natural forest resources in the Namibian national economy, in a priority order, are:

- Forests environmental protection
- Provision of specialised local forest products
- Support to wildlife activity and ecotourism

Environmental Functions of forests

The Namibian people stand to derive in the long-term substantial use value from the environmental services provided by their forest resources if managed on a sustainable basis. Conservation of soil and water resources constitute the most important service to be derived from sustainable management of the national forest resources, which will benefit mainly agricultural production. Conservation of soil and water resources is extremely important, given the nation’s low utilisation of commercial fertilisers and the harsh climatic conditions prevalent in the arid and semi-arid areas that cover much of the country.

The regulatory functions provided by sustainably managed natural forest resources will contribute indirectly to the national economic activity through inter-linkages with other land use sectors. Although the economic value of the regulatory functions provided by the forest resources is currently difficult to quantify, it is plausible to assume that it outweighs that of forest productive uses in the national economy.

Another important environmental function of the savannas and woodlands is their biological diversity, genetic material and the potential impact of their ecosystems on the climate through the ability of the forests to sequester carbon. Although currently there exist no meaningful investigation into the genetic material stored by indigenous trees and shrubs, their anticipated future contribution to increased agricultural productivity and pharmaceuticals cannot be underestimated.

Production of specialised local forest products

Energy for cooking derived from firewood is currently the most important domestic consumption requirement satisfied by exploitation of natural forest resources. Domestic forest resources will continue to satisfy national fuelwood requirements in the foreseeable future. However, certain regions will soon start to experience localised firewood shortages due to harvesting from unsustainable supplies.
After firewood, the next important domestic requirements satisfied by productive uses of forests is the consumption of non-wood products (particularly food, fodder and medicinal products). The harvesting of non-wood products provide much needed rural subsistence consumption and cash income; as demonstrated by trade in fruits and mopane worms in the Northern regions of the country, and the dependence of cattle and other livestock on savannas and woodlands for grazing and browsing throughout the country. Dependency on traditional medicine varies considerably across the country. Medicinal plants collected from forest areas are used to treat a variety of ailments by local households, ranging from fevers and colds to tumours.

Wood is also widely used as building material in homesteads and protection of farmlands. The importance of wood as a source of building material is gradually going to decline in the near future as more of it is obtained from unsustainable supplies.

**Wildlife activity and ecotourism**

Namibian woody vegetation resources are rich in biological diversity. The country has a number of endemic species of plants and a diversity of woodlands types with ecotourism potentials that remain largely unexploited at the moment. It also has a rich culture in wood carvings and crafts supported by the woodlands. In this respect, the nation’s savannas and woodlands constitute a very important wildland habitat that, when its maximum exploitation for ecotourism will be attained will contribute a large share towards the availability of foreign exchange in the national economy.

### 1.5 Stakeholders in forestry development

The achievement of the desired goals of managing Namibian natural forests, is the responsibility of the stakeholders who organise development efforts in the forestry sector. There are two important groups of stakeholders in the sector:

- Forest resource users.
- Institutions that provide financial resources or support to the implementation of development projects and programmes in the sector.

#### 1.5.1 Forest resource users

The primary users are farmers and local communities who for a long time have exploited, and continue to exploit the forest resources in order to satisfy their domestic forest products consumption needs. The private sector also relies on the forest resources for its supplies of wood that it processes further into consumer products. Non-wood products associated with the conservation and management of the natural forests constitute a potential supply of raw materials to the private sector small scale income generating processing activities. Wildlife held within and supported by forest resources is an important source of human recreation, which provide a source of income generation to private sector investors.
1.5.2 Institutions that provide financial and capacity building support

**Government**

The Directorate of Forestry is the lead public forestry institution charged with the responsibility of forest policy making and implementation. Therefore, the Government is an important stakeholder with the commitment to provide financial resources to the Directorate that will enable it to carry out policy implementation through; legislation, development programmes, provision of technical expertise in forest planning and management, research and resource assessment.

**Non-governmental organisations**

The role of non-governmental organisations in the forestry sector is mainly indirect; through strengthening rural organisations and building up the confidence of the rural people in finding independent solutions to their problems. Their presence and their advice tend to be more acceptable because of their mass-consultative approach and their perceived empathy with the people’s problems and needs. Some of the roles that can be found for non-governmental organisations are: advocacy of the rights of the rural people, community organisation and mobilisation, capacity building and skills development, participatory and action-oriented research and extension, access to resources and direct participation in forest conservation and management.

**International community**

International community provides financial support that complement Government budgetary allocations to development programmes in the sector. This support is used mainly to sponsor forestry development projects. International community possession of financial resources gives them the ability to influence, to a certain degree, the decision process in the forestry sector. However, it is important that international community influence does not lead to the preparation of plans and programmes that reflect their demands which make aid conditional upon them. Planning and implementation of programmes in the sector should reflect national stakeholders own willingness to assume responsibility for forestry development.
1.6 Responsibility for financing forestry development

The responsibility of the forestry sector in the national economy is to continue supplying forest outputs and benefits to the ability of the capacity of the sector to meet the national demands for these products and benefits. The outputs and benefits expected from the Namibian forest resources, together with the nature of their demand and supply are given in Table 1.3.

<table>
<thead>
<tr>
<th>Output/Benefit</th>
<th>Demand</th>
<th>Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil &amp; water conservation</td>
<td>Local-public benefit</td>
<td>Non-site specific origin</td>
</tr>
<tr>
<td>Ecotourism</td>
<td>Global-private good</td>
<td>Site specific</td>
</tr>
<tr>
<td>Recreation</td>
<td>Local-private good</td>
<td>Site specific</td>
</tr>
<tr>
<td>Biodiversity</td>
<td>Global-public good</td>
<td>Site specific</td>
</tr>
<tr>
<td>Carbon sequestration</td>
<td>Global-public benefit</td>
<td>Non-site specific origin</td>
</tr>
<tr>
<td>Fuelwood</td>
<td>Local-private good</td>
<td>Site specific</td>
</tr>
<tr>
<td>Building material</td>
<td>Local private good</td>
<td>Site specific</td>
</tr>
<tr>
<td>Non-wood products</td>
<td>Local-private goods</td>
<td>Site specific</td>
</tr>
<tr>
<td>Industrial wood</td>
<td>Local-private good</td>
<td>Site specific</td>
</tr>
</tbody>
</table>

Table 1.3 Outputs and benefits derived from forest resources

Two types of projects are to be executed in order to obtain these outputs and benefits:

- **Type I projects are essentially development projects.** Under this category of projects, those that have excess of domestic benefits over costs constitute efficient investment that contribute to national socio-economic development.

- **Type II projects yield net global benefits.** These projects are most likely not able to yield net economic benefits from the standpoint of national economic development, but will yield net global benefits. They are characterised by the following conditions: (1) their domestic costs exceed domestic benefits, and (2) their global benefits exceed domestic costs.

Individuals, farmers, local communities, and the private sector should demonstrate the willingness and ability to implement Type I (development) projects that produce outputs and benefits with direct economic returns that exceed the value of the resources allocated to the activities that supply the outputs and benefits.

The remaining category of Type I (development) projects that produce forest outputs and benefits that are subject to market failure; i.e., their goods and services either provide indirect economic returns or have the potential to yield direct economic returns that are currently non-marketable, should be sponsored by stakeholders with a public interest in forestry sector development. These stakeholders will to a large extent be Government agencies, and to a lesser extent local communities.
Since Type II projects represent an inefficient way of using both domestic private and public scarce investible resources, they will retard the desired socio-economic progress if they are financed by national private or public stakeholders. The international community should therefore demonstrate the willingness and ability to finance forestry projects in the national economy that yield net global benefits. A good example of the international community willingness and ability in this area is demonstrated by the establishment of the Global Environmental Facility that has the responsibility to assist developing countries in the implementation of the International Conventions on Climate Change and Biodiversity.

**Summary**

This chapter has described the influence of rainfall availability on the nature and distribution of woody vegetation in Namibia. A survey of the economic value of the three vegetation types namely: deserts, savannas and woodlands; has shown that the most important functions of management of the natural forest resources in the Namibian national economy, in a priority order are forests environmental protection, provision of specialised local forest products and support to wildlife activity and ecotourism. The chapter has also examined the nature of demand and supply of the forest products and services, and the abiding interest of stakeholders responsible for organising development efforts in the forestry sector. The following chapter will assess the national capacity (in terms of forests and institutional resources) to satisfy the demand for forest products and services.
<table>
<thead>
<tr>
<th>Vegetation Type</th>
<th>Species</th>
<th>Economic importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deserts</td>
<td>Acanthosicyos horridus (nara)</td>
<td>Food</td>
</tr>
<tr>
<td>Savannas</td>
<td>Acacia karroo (sweet thorn)</td>
<td>Firewood, beekeeping</td>
</tr>
<tr>
<td></td>
<td>Acacia erioloba (camelthorn)</td>
<td>Firewood, shade</td>
</tr>
<tr>
<td></td>
<td>Acacia tortilis (umbrella thorn)</td>
<td>Firewood, nitrogen fixing</td>
</tr>
<tr>
<td></td>
<td>Adenolobus garipensis (blue neat’s foot)</td>
<td>Fodder, nitrogen fixing</td>
</tr>
<tr>
<td></td>
<td>Baikiaea plurijuga (Zambezi teak)</td>
<td>Hardwood, saw milling</td>
</tr>
<tr>
<td></td>
<td>Berchemia discolor (Bird plum)</td>
<td>Food, shade, foder</td>
</tr>
<tr>
<td></td>
<td>Boscia albitrunca (Shepherds tree)</td>
<td>Fodder, fruit</td>
</tr>
<tr>
<td></td>
<td>Colophospermum mopane (Mopane)</td>
<td>Firewood, foder, poles</td>
</tr>
<tr>
<td></td>
<td>Combretum apiculatum (Kudubush)</td>
<td>Firewood, foder</td>
</tr>
<tr>
<td></td>
<td>Euclea poxdebenes (False ebony)</td>
<td>Shade, foder</td>
</tr>
<tr>
<td></td>
<td>Faidherbia albida (ana tree)</td>
<td>Fodder, nitrogen fixing</td>
</tr>
<tr>
<td></td>
<td>Guibourtia coleosperma (Shivi tree)</td>
<td>Hardwood, fruit</td>
</tr>
<tr>
<td></td>
<td>Grewia flava (Brandy bush)</td>
<td>Food, foder</td>
</tr>
<tr>
<td></td>
<td>Kirkia acuminata (Mountain syringa)</td>
<td>Hardwood</td>
</tr>
<tr>
<td></td>
<td>Lonchocarpus nelsi (Apple leaf)</td>
<td>Fodder, nitrogen fixing</td>
</tr>
<tr>
<td></td>
<td>Maerua schinzi (Ringwood tree)</td>
<td>Fodder, shade</td>
</tr>
<tr>
<td></td>
<td>Okea europea subsp africana (Wild olive)</td>
<td>Shade, hardwood</td>
</tr>
<tr>
<td></td>
<td>Spirostachys africana (Tambuti)</td>
<td>Hardwood, mine props</td>
</tr>
<tr>
<td></td>
<td>Terminalia sericea (Silver terminalia)</td>
<td>Poles, foder</td>
</tr>
<tr>
<td></td>
<td>Vangueria infausta (wild medlar)</td>
<td>Fruit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woodlands</th>
<th>Acacia erioloba (Camelthorn)</th>
<th>Firewood, shade</th>
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<tbody>
<tr>
<td></td>
<td>Acacia tortilis (umbrella thorn)</td>
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<tr>
<td></td>
<td>Adansonia digitata (Baobab)</td>
<td>Food</td>
</tr>
<tr>
<td></td>
<td>Ammonia stenophylla (Small wild custard apple)</td>
<td>Fruit</td>
</tr>
<tr>
<td></td>
<td>Batikiaea plurijuga (Zambezi teak)</td>
<td>Hardwood</td>
</tr>
<tr>
<td></td>
<td>Berchemia discolor (Bird plum)</td>
<td>Fruit, shade, foder</td>
</tr>
<tr>
<td></td>
<td>Boscia albitrunca (Shepherds tree)</td>
<td>Fodder, fruit</td>
</tr>
<tr>
<td></td>
<td>Colophospermum mopane (Mopane)</td>
<td>Firewood, foder, poles</td>
</tr>
<tr>
<td></td>
<td>Combretum apiculatum (Kudubush)</td>
<td>Firewood, foder</td>
</tr>
<tr>
<td></td>
<td>Faidherbia albida (Ana tree)</td>
<td>Fodder, nitrogen fixing</td>
</tr>
<tr>
<td></td>
<td>Guibourtia coleosperma (Shivi tree)</td>
<td>Hardwood, fruit</td>
</tr>
<tr>
<td></td>
<td>Hyphaene peterstana (Makalani palm)</td>
<td>Fruit, weaving</td>
</tr>
<tr>
<td></td>
<td>Kirkia acuminata (Mountain syringa)</td>
<td>Hardwood</td>
</tr>
<tr>
<td></td>
<td>Lonchocarpus nelsi (Apple leaf)</td>
<td>Fodder, nitrogen fixing</td>
</tr>
<tr>
<td></td>
<td>Maerua schinzi (Ringwood tree)</td>
<td>Fodder, shade</td>
</tr>
<tr>
<td></td>
<td>Parinari curatelifolia (Mobola plum)</td>
<td>Fruit</td>
</tr>
<tr>
<td></td>
<td>Pilostigma thomsonii (Camel’s foot)</td>
<td>Fodder, food, nitrogen fixing</td>
</tr>
<tr>
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<td>Pterocarpus angolensis (African teak)</td>
<td>Hardwood, saw milling</td>
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<tr>
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<td>Sesbania sesban</td>
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</tr>
<tr>
<td></td>
<td>Sclerocarya bataua (Manketti)</td>
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<td></td>
<td>Spirostachys africana (Tambuti)</td>
<td>Hardwood</td>
</tr>
<tr>
<td></td>
<td>Styphnos coccoculoides (Monkey orange)</td>
<td>Fruit</td>
</tr>
<tr>
<td></td>
<td>Styphnos pungeus (Spiny monkey orange)</td>
<td>Poles, foder, firewood</td>
</tr>
<tr>
<td></td>
<td>Terminalia sericea (Silver terminalia)</td>
<td>Food</td>
</tr>
<tr>
<td></td>
<td>Trichilia emetica (Natal mahogany)</td>
<td>Fruit</td>
</tr>
<tr>
<td></td>
<td>Vangueria infausta (wild medlar)</td>
<td>Fruit</td>
</tr>
</tbody>
</table>
Figure 1.1  The extent of ecological zones as determined by rainfall availability

Sources

Directorate of Forestry
Rainfall modified DWA 1981
Regions Government Gazette 1994
Prepared for: Directorate of Forestry
Prepared by: National Sensing Centre

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2. **THE NATIONAL CAPACITY TO MEET THE DEMAND FOR FOREST PRODUCTS AND SERVICES**

2.1 **Trends in the consumption of products and services**

Requisite information on wood resources, non-wood resources and services (e.g., recreational potential, conditions of wildlife habitat, status of watershed management, etc.), market information and information on changes in social preferences, is essential for effective strategic planning. Unfortunately, the skimpiness and non-availability of this information is a major constraint to quantitative assessment of the Namibian forests resource base to meet the demands for forest products and services. Assessment of consumption of products and services is therefore, done in terms of observable trends that are currently unmeasurable due to:

- past negligence of collection of market information on consumption of forest products,
- subsistence consumption that does not keep records on the amount of forest products consumed,
- the current inability to quantify the flow of forests environmental services and the relative values society places on these services.

2.1.1 **Wood products**

The domestic market for wood products is dominated by:

- firewood,
- charcoal,
- poles and posts,
- ornamental wood products,
- farm implements,
- sawnwood,
- boards,
- paper.

*Firewood*

Firewood is the main source of energy for cooking in the rural areas and for low income urban households. Some firewood is also exported to the Republic of South Africa from the Central regions. Subsistence consumption accounts for a large share of the amount of domestic firewood requirements. The subsistence economy is destined to remain a major component of the national economy for the foreseeable future. This means that subsistence firewood consumption will continue to be mainly directly related to the size of the rural population. The urban consumption should be responsive to the price of firewood, and this opens the possibilities of energy substitution which makes the urban consumption trend to be less directly related to future changes in urban population.
Domestic expansion in firewood consumption is likely going to force the Government to reconsider the wisdom of firewood exportation to the Republic of South Africa. In the likely event that the Government would prefer to satisfy domestic consumption of firewood, policy measures that will be instituted to achieve this objective will gradually lead to a decline in the trend of firewood exports.

**Charcoal**

Domestic consumers of charcoal are urban households and hotels. Their consumption represent a small share of the national output of charcoal. The demand for charcoal by these consumers is mainly for barbecue, which is locally referred to as *braai*. Namibia culture of eating meat will continue to demand charcoal for *braai*. The future domestic trend in charcoal consumption will be influenced by the movement of households into middle and upper income levels, and policy measures to guide its marketing and promotion of additional end-users.

Export markets (Germany, UK, Republic of South Africa) are currently the main consumers of Namibian charcoal. The future of this market will most likely be influenced by the emerging international requirement of forest products certification. The charcoal export trend will therefore be determined by the national willingness and ability to manage the forest resource on a sustainable basis.

**Poles and posts**

Fencing posts are consumed mainly on commercial farms and their total demand is currently met by imports. Expansion of agricultural production in the near future is unlikely owing to its low profitability. This means that fencing posts will be needed mainly for repairs and replacement. Hence, it is plausible to assume that commercial farm consumption will remain rather stable. The main Government development effort is targeted on the Northern regions, which may increase the demand for posts through construction activities. Moreover, privatisation of land in the Northern region, if implemented, may create the need to mark the boundaries in fences. Another source of increased demand for posts will be intensive management of games and national parks which require construction of more protective fences.

The consumption of transmission poles constitute a relatively small market of wood products that is satisfied by imports. In the recent past, the consumption has experienced little variation. In the near future the market is expected to remain stable or grow slightly along with the expansion of the national economy. The telephone company intends to abandon transmission lines which require wooden poles and switch over to optic fibre, this will make maintenance work to be the main source of demand for poles.
**Ornamental products**

Wood carvings are purchased mainly by tourists visiting the country and only a small percentage is exported directly. The main source of demand for sand blasted mopane roots is the European export market. The potential for tourism industry in the 21 Century is promising. Consequently, trade in wood carvings is expected to grow in line with expansion in tourism industry. Although mopane roots are sand blasted before they are exported, the Government is currently considering implementation of policy measures that will encourage further domestic processing of the roots before they are exported. The increased value added due to domestic processing will enhance the marketability of the roots and increase the future supply of mopane products.

**Farm implements**

The communal rural household economy is the main consumer of farm implements. Examples from Central North region include mahangu storage baskets that are made from mopane sticks and bark, and the hardwood mortar and pestles that are used to pound the grain. The share of the rural economy in the national economy will continue to determine the consumption of farm implements for the foreseeable future.

**Sawnwood**

Consumption of sawnwood has the largest share of the domestic market for wood products. Almost all consumption of sawnwood is softwood timber imported from the Republic of South Africa. The remainder of sawnwood demand is met by domestic production. Consumption is likely to increase along with the expansion of the national economy and particularly the Government policy of earmarking housing as a priority sector for development. However, the relatively high price of sawn timber that is already inducing a penetration of substitutes into sawnwood market, will dampen the magnitude of the trend influenced by the structural changes in the national economy. For example, the Government is currently considering replacing wood with other substances as construction material in Government housing schemes. The possibility of importing sawnwood from neighbouring Angola and Zambia if realised, will generate downwards pressure on domestic sawnwood prices and encourage its consumption.

**Boards**

Consumption of wood-based panels is met entirely by imports. Future trends in the consumption of these products are increasing, and the main driving force is the growing construction and housing industry in the national economy. Like sawnwood, the magnitude of the future trends of these products is going to be dampened by the relatively high price of the products that will encourage the consumption of substitute materials in construction and housing industry.
Consumption of all categories of paper products is satisfied by imports. Currently, there is no information kept in Namibia on the consumption of paper products. Nevertheless, it is plausible to assume that the trend in consumption of these products is increasing directly in line with the expansion in the national economy. The Government policy of targeting education as a priority sector for development intended to enhance the skills capacity of the human resources, is bound to intensify the increase in the assumed trend of consumption of paper products. As a result of the structural changes in the development of human resources, the trend in consumption of paper products will continue to increase in the foreseeable future.

2.1.2 Non-wood forest products

Rural households obtain multiple non-wood products from the natural forest resources, that supplement subsistence agricultural production contribution towards the achievement of the goals of food security and decent health status. The non-wood products in question are numerous and varied, and fall into three broad categories:

- forest food, beverages, drugs and cosmetics
- livestock fodder
- crafts and housing materials.

A large share of these products are consumed at home. A certain amount is exchanged in local markets and redistributed further. Commercialisation of these products will increase their future consumption in the national and global economies. However, the envisaged increased trend in their consumption will require policy incentives to encourage their exploitation as major sources of raw materials in the manufacture of industrial products.

2.1.3 Recreation and ecotourism

Tourism is one of Namibia’s most rapidly expanding sectors in the national economy. This industry is based on wildlife held within and supported by savannas and woodlands, that constitute a particular source of human recreation and provide a source of generating valuable foreign exchange. The Government is willing and able to take advantage of the opportunities for ecotourism offered by their wildlife. In addition, cultural tourism as a component of ecotourism, is in its infancy in Namibia, particularly in the North Eastern region. The promotion of tourism and non-consumptive tourism depends on sustainable management of the forest resource for biodiversity conservation. A real source of risk to biodiversity conservation in Namibia is an expansion in agricultural activities that could lead to the removal of essential wildland habitat and marginalise the population of wild animals. Nevertheless, given Government commitment to the development of the tourism industry, ecotourism has a bright future and should continue to flourish and expand into the foreseeable future.
2.1.4 Environmental services

The communal farming sub-sector is currently characterized by low, unstable and declining levels of productivity, production and farm incomes. The ability of sustainably managed woody vegetation to maintain soil fertility and protect dryland watersheds, given the low utilization of fertilizer in agriculture and the harsh ecological conditions prevalent over much of the land mass, is probably the most important indirect contribution it can make towards enhancing agricultural production and farm incomes. Since the communal areas support 95 per cent of the farming population, sound management of woody vegetation for conservation of soil and water resources will reverse the declining trend in agricultural production and raise rural farm incomes. The flow of environmental services from sustainably managed woodlands will also benefit other sub-sectors inherently inter-linked with woodlands conservation and management. Table 2.1 gives a summary of trends in consumption of forest products and services.

2.2 Forest resource base

Domestic forest resources vary from small trees and shrubs in the Namib desert to dry woodlands in the North-Eastern region. They are characterized by sparsely stocked inventory, medium high forests, savanna tree species and bushes. The dry woodland zone that represent the country’s main forest potential has 10 million hectares of forests (of which 1.9 million hectares are commercially exploitable forests), and the rest is open woodland.

The assessment of the forest resource capacity to meet the national demands for forest products and services is severely constrained by lack of the following information:

- wood biomass inventory
- percentage of wood biomass that can be sustainably harvested
- percent allocation of sustainable harvest volume to timber, poles and fuelwood
- trends in wood biomass, net annual growth and harvests
- trends in wood related land uses.

The Directorate of Forestry has just completed vegetation land cover mapping and in addition, is currently carrying out a national inventory of the forest resources. Results of the inventory project will in future make it possible to undertake a quantitative assessment of the forest resources. In the meantime, a heuristic assessment of the forest resources will be used in the following discussions of demand and supply balances for forest products and services.
<table>
<thead>
<tr>
<th>Requirements</th>
<th>Trends</th>
<th>Driving force</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firewood</td>
<td>• Increasing consumption in rural areas</td>
<td>• Subsistence economy</td>
</tr>
<tr>
<td></td>
<td>• Urban consumption to increase at a decreasing rate</td>
<td>• Possibilities of energy substitution due to changes in income</td>
</tr>
<tr>
<td></td>
<td>• Firewood exports to decline</td>
<td>• Government policy aimed at satisfying domestic needs</td>
</tr>
<tr>
<td>Charcoal</td>
<td>• Increasing domestic consumption</td>
<td>• Increased demand for <em>braai</em> in urban areas</td>
</tr>
<tr>
<td></td>
<td>• Indeterminate export trend</td>
<td>• International requirement of forest products certification</td>
</tr>
<tr>
<td>Poles and posts</td>
<td>• No changes in consumption of fencing posts on</td>
<td>• Stagnant commercial agricultural production</td>
</tr>
<tr>
<td></td>
<td>commercial farms</td>
<td>• Possibilities of privatization of communal land and</td>
</tr>
<tr>
<td></td>
<td>• Increasing posts consumption on farms in the</td>
<td>intensive management of national parks</td>
</tr>
<tr>
<td></td>
<td>Northern regions and national parks</td>
<td>• Telephone company switch to optic fibres</td>
</tr>
<tr>
<td></td>
<td>• Consumption of poles to remain stable or grow in</td>
<td></td>
</tr>
<tr>
<td></td>
<td>line with the expansion in the national economy</td>
<td></td>
</tr>
<tr>
<td>Ornamental products</td>
<td>• Increasing demand for carvings</td>
<td>• Expanding tourist industry</td>
</tr>
<tr>
<td></td>
<td>• Increasing demand for mopane roots</td>
<td>• Enhanced product quality and marketing</td>
</tr>
<tr>
<td>Farm implements</td>
<td>• Increasing consumption of farm implements</td>
<td>• Share of the rural economy in gross domestic product</td>
</tr>
<tr>
<td>Sawnwood</td>
<td>• Gently rising consumption</td>
<td>• Changes in national output and income levels</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Government housing policy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Relative price level of substitute materials</td>
</tr>
<tr>
<td>Boards</td>
<td>• Gently rising future consumption</td>
<td>• Expansion in the construction and housing industry, and relative price</td>
</tr>
<tr>
<td></td>
<td></td>
<td>level of substitute materials</td>
</tr>
<tr>
<td>Paper</td>
<td>• Increasing future consumption</td>
<td>• Expansion in national output income levels and education</td>
</tr>
<tr>
<td>Non-wood products</td>
<td>• Increased future consumption</td>
<td>• Policy incentives to encourage small scale processing activities</td>
</tr>
<tr>
<td>Recreation and</td>
<td>• Increasing future consumption</td>
<td>• Expansion in tourism industry and human recreation</td>
</tr>
<tr>
<td>ecotourism</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental services</td>
<td>• Expected increased flows</td>
<td>• Sustainable management of natural forests</td>
</tr>
</tbody>
</table>
2.3 Demand and supply balances

2.3.1 Outlook for consumption of forest products

Subsistence consumption of forest products will continue to rise more or less at the same rate with the increase in the share of the population with little or no cash income. On the other hand, the consumption of marketable forest products, and particularly industrial products, will continue to increase in the foreseeable future, as national output and income levels grow due to various Government policy measures aimed at increasing the rate of economic growth and ameliorating the prevailing inequitable income distribution.

The burden of satisfying the rising demand for forest products either as a result of subsistence consumption or due to increasing output and income levels, will have to be met by product supplies from domestic natural forest resources supplemented by imports and farm forestry products; since establishment of large scale plantations monocultures is not feasible.

2.3.2 Flow of environmental benefits

The savannas and woodlands are sparsely stocked, and generally produce less wood per unit of land area. This characteristic of wood production is a disadvantage on the one hand in the sense that, the number of hectares necessary to produce a target wood supply is greater. On the other hand, from the perspective of provision of forest environmental benefits (particularly soil and water conservation), the environmental impact per given target of wood output may be greater.

2.3.3 Reconciling the forecasts of supply and demand

Although savannas and woodlands have the ability to meet the demands for non-wood products and environmental services, there is substantial concern regarding the sustainability of timber production from this resource to satisfy the expected increase in demand for wood products. The reasons for this concerns are:

- At the moment there is negligible amount of sustainable management of the existing natural forest resources.
- Timber, poles and fuelwood harvests reflect unknown draw-downs of the original forest inventory, and this is degrading the land or the residual forest in regions experiencing non-sustainable harvesting so much that continued forest production is unlikely.
- Some forest harvests precede land conversion to a higher valued agricultural use.

A certain percentage of non-sustainable timber harvesting is exported as fuelwood, sawnwood and wood carvings. With the concept of timber certification gaining currency, this should slow down non-sustainable timber harvests for exports.
The rising demand for forest-based building materials and fuelwood in the regions currently experiencing short fall in supply may be satisfied through extending cuttings to regions with surplus forest inventory. In the meantime, as the abundance of the forest resource declines, the price of wood products will increase to levels that will justify natural forests management costs in the deficit areas. This will further lead to the development of management efficiencies, creation of incentives to reduce waste in production and increased effort to develop more efficient schemes for exploiting the savannahs and woodlands resources. Secure property rights will give stronger incentives to manage natural forest resources for long-term benefits.

As output and incomes grow, the increasing per capita consumption of industrial wood products will have to be met by imports. Imports will remain a viable alternative of closing the short fall in domestic supply of industrial wood products, as long as export earnings from other sectors remain dynamic to preclude national demand for imports outstripping the availability of foreign exchange to buy them with.

2.4 Institutional resources

2.4.1 Forest policy and legislation

The current national forest policy

Policy objectives. Namibia 1992 Forest Policy Statement for Namibia defines 11 objectives that should guide forestry sector development:

- Maintenance of environmental stability through preservation and restoration of ecological balance.
- Conservation of the country’s natural heritage by preservation of the natural forests habitat.
- Reservation of sufficient forest land for multipurpose use for forestry activities.
- Expansion of the national forest cover to enhance the supply of wood products.
- Supporting afforestation to ensure national self-sufficiency in wood products.
- Encourage efficient and sustainable utilisation of forest resources.
- Proper management and controlled exploitation of national forest resources.
- Increase and support by means of research the professional knowledge of the national forests and forestry related matters.
- Government should control trade and processing of wood and other forest products to ensure forestry based industrial development and protection of both the environment and commercial interests of the nation.
- Increase the awareness of the importance of forest and trees in the environment in the whole country through participatory rural and gender strategies.
- Forestry should play a key role in the contribution to sustained food production through close integration with the rural sources of livelihood.
Objectives to guide forestry sector development should be determined by the direct benefits from the forest resource and requisite contribution of forests to fundamental objectives of the national economy. The objectives specified in the 1992 Forest Policy Statement seem not to have been derived explicitly from the potential capacity of the domestic natural forest resources contributions to the national economy. In this respect, they are imprecise and unclear and therefore, cannot succeed in guiding forestry sector development.

**Policy means.** The appropriate policy means (sometimes referred to as incentives or instruments) used to promote policy implementation fall into four major categories:

- public ownership and operation
- public regulation of the use of the private forests
- public stimulation, guidance and assistance to private forest management
- private implementation of forest policies.

Policy decisions about these incentives precede the establishment of forestry programmes. Hence, it is expected that forest programmes and the administrative organisation of the Directorate of Forestry should be designed to apply one or more of these incentives.

The strategies of the 1992 Forest Policy Statement may be summarised into the following four main functions:

- **A basis for legislation.** Authorisation of forest authorities, regulation of land use, control of the movement of forest products and the activities of the forest industry.
- **A basis for management.** Protection of the forest resource from misuse, enhance Government regulation of management, provide stability and continuity of forest management, to allocate resources and resolve conflicts on forest land.
- **Information and communication.** To publicise the roles of forestry, to promote the operations of the authority, to guide the forest authority, to inform and educate the public, to encourage training and engage in research and extension.
- **Contribution to national development welfare.** To promote self-sufficiency in forest products or to create reserves of timber, to conserve forest resources and to maintain environmental quality, to assist in the development of forest resources and the industries based on the and to reconcile forest policies with other national policies.

Diversity of purpose revealed by such a classification cannot be served by a single comprehensive Government declaration, rather; a more pragmatic approach to the design of incentives for policy implementation should have been used.
The proposed forests legislation

The 1992 Forest Policy Statement has at the moment no legislation to implement it. The existing legislation dates from the colonial era and is not consistent with the requirements of the national policy.

The Directorate of Forestry, with the assistance of Food and Agricultural Organisation, is currently preparing a new legislation. In the likely event that the existing national forest policy may require revision to transform it into an effective Government declaration that constitute an efficient basis for forestry sector development, the preparation of the new legislation ahead of the policy revision may not be a wise decision. As a matter of principle and consistency in policy implementation, a forest legislation should be derived from the objectives and means of the Government policy that it is intended to implement.

2.4.2 Directorate of Forestry

Directorate of Forestry is the lead public institution in the forestry sector. The current administrative structure of the Directorate is depicted in Figure 2.1. The Directorate task of policy implementation entails the following responsibilities:

- Protection and management of State forests
- Promotion of farm forestry
- Administration of forests rights and concessions
- Conservation of wildland habitat
- Provision of extension services
- Undertaking action-oriented forestry research
- Maintenance of an efficient sector-wide management information system

The Directorate has at its disposal the following human and financial resources that it employs in the task of policy implementation:

**Human resources**

The balance between positions established and currently filled in the Directorate of Forestry is presented in Table 2.2.

**Table 2.2** Directorate of Forestry skilled personnel employment

<table>
<thead>
<tr>
<th>Category</th>
<th>Established</th>
<th>Filled</th>
<th>Vacant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional</td>
<td>31</td>
<td>9</td>
<td>22</td>
</tr>
<tr>
<td>Technical</td>
<td>29</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>Vocational</td>
<td>60</td>
<td>38</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
<td>61</td>
<td>59</td>
</tr>
</tbody>
</table>
Figure 2.1 Directorate of Forestry: Current organisational structure

DIRECTORATE OF FORESTRY

FOREST RESEARCH DIVISION

- SUBDIVISION: National Remote Sensing Centre
- SUBDIVISION: Forest Field Research
- SUBDIVISION: Research Data and Information

FOREST MANAGEMENT AND EXTENSION DIVISION - NORTH AND CENTRAL

- SUBDIVISION: Northern region
- KATIMA MULILO DFO
- ONGWEDIVA DFO / RO
- OTJIWARONGO DFO

FOREST MANAGEMENT AND EXTENSION DIVISION - SOUTH AND SUPPORT SERVICES

- SUBDIVISION: Southern region
- TSUMKWE DFO
- GROOTFONTEIN DFO
- KEETMANSHOOP DFO

- SUBDIVISION: Support services
- WINDHOEK DFO
- OPUWO DFO
- GOBABIS DFO

KANOVLEI FRS
HARAP FRS
HAMOYE FRS
WALVIS BAY FRS

C FRC - NATIONAL FOREST RESEARCH CENTRE
C FRS - FORESTRY RESEARCH STATION
C TSC - TREE SEED CENTRE
C DFO - DISTRICT FORESTRY OFFICE
RO - REGIONAL FORESTRY OFFICE
The prevailing state of shortage of forestry staff means that, the Directorate of Forestry has inadequate technical capacity for effective implementation of the 1992 Forest Policy Statement. Moreover, the technical capacity constraint is most likely exacerbated by inadequate institutional development that further constraints the capacity of the Directorate to use the available human and financial resources effectively.

**Financial resources**

Effective implementation of public forestry programmes requires sufficient budgetary allocations to finance requisite investments and recurrent expenditure requirements created by investments and human resource employment. Financing of forestry programmes is therefore a critical phase in the execution of national forest policy.

At the moment, Treasury budgetary allocations to finance public forestry programmes are complemented by support from the international community. The support from the international community to the Directorate of Forestry has on average accounted for 64% of the total budget. The trend in the share of the two sources of funding in the total budget of the Directorate is depicted in Figure 2.2.

**Figure 2.2** The share of Treasury and International Community funds in the total budget of the Directorate (million N$ constant 1990 prices)
Treasury budget allocations. Treasury budget allocations to the Directorate are earmarked for financing development and recurrent expenditures. Between 1991 - 1993, all budget allocations to the Directorate were earmarked for recurrent expenditures only. Allocations for development expenditures started in 1994. The trend in the share of funds earmarked for development and recurrent expenditures in the total budget allocations to the Directorate is depicted in Figure 2.3.

The Directorate budget allocations for recurrent expenditures has been rising since independence. The increasing trend in allocations for recurrent expenditures indicates Government commitment to the sustainability of project activities implemented by the Directorate. The Directorate of Forestry is therefore, currently receiving adequate financial resources from the Treasury to enable it meet the levels of recurrent expenditure necessary for sustaining forestry activities.

Figure 2.3 Development and recurrent expenditures (million NS$ constant 1990 prices)

Support from the international community. External support to the forestry sector has so far been in the form of grants. Forestry projects funded by donor grants are presented in Table 2.3. Finland is the leading donor providing approximately 31% of the total international community budget support to the forestry sector. In addition, Finland supports forestry training at Ongono Agricultural college, and offers scholarships to Namibians through its support to the SADC programme. The allocation of international community funds to various categories of project activities is presented in Table 2.4. The total budget for donor support to the forestry sector has been on average allocated as follows:
<table>
<thead>
<tr>
<th>International community funds allocation</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical assistance</td>
<td>44</td>
</tr>
<tr>
<td>Procurement of vehicles and equipment</td>
<td>25</td>
</tr>
<tr>
<td>Other project activities</td>
<td>19</td>
</tr>
<tr>
<td>Training of local staff</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Funds allocated to international technical assistance would have a greater impact on institutional strengthening of the Directorate of Forestry if the following conditions were fulfilled; a) availability of counterparts to whom they could transfer knowledge and skills, b) availability of training facilities, c) efficient intra and inter-ministerial co-ordination of forestry activities and d) effective training of local staff by the international consultants. Unfortunately none of these conditions is fulfilled, and all international technical assistance are involved in project implementation. Their impact in the development of the Namibian forestry sector is therefore indeterminate.

**Table 2.3** Forestry projects financed by the international community

<table>
<thead>
<tr>
<th>Project</th>
<th>Country</th>
<th>Budget (N$)</th>
<th>Period</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>National remote sensing centre</td>
<td>Denmark</td>
<td>3 000 000</td>
<td>1993 - 1996</td>
<td>Completed</td>
</tr>
<tr>
<td>Vegetation mapping</td>
<td>Sweden</td>
<td>4 721 000</td>
<td>1993 - 1996</td>
<td>Completed</td>
</tr>
<tr>
<td>Institutional strengthening</td>
<td>Finland</td>
<td>4 100 000</td>
<td>1991 - 1996</td>
<td>On-going</td>
</tr>
<tr>
<td>Forest inventory</td>
<td>Finland</td>
<td>3 300 000</td>
<td>1995 - 1996</td>
<td>On-going</td>
</tr>
<tr>
<td>Forest fire control</td>
<td>Finland</td>
<td>900 000</td>
<td>1996</td>
<td>On-going</td>
</tr>
<tr>
<td>National tree seed centre</td>
<td>Canada</td>
<td>2 800 000</td>
<td>1994 - 2000</td>
<td>On-going</td>
</tr>
<tr>
<td>Forest research and development</td>
<td>United Kingdom</td>
<td>3 510 000</td>
<td>1994 - 1997</td>
<td>On-going</td>
</tr>
<tr>
<td>Kavango forest support</td>
<td>Luxembourg</td>
<td>1 692 000</td>
<td>1994 - 1997</td>
<td>On-going</td>
</tr>
<tr>
<td>Support to forestry sector</td>
<td>Australia</td>
<td>1 500 000</td>
<td>1995 - 1997</td>
<td>On-going</td>
</tr>
<tr>
<td>North-Central community forestry</td>
<td>Denmark</td>
<td>6 765 000</td>
<td>1997 - 1999</td>
<td>Expected</td>
</tr>
<tr>
<td>Volunteer services to forestry</td>
<td>Germany</td>
<td>1 050 000</td>
<td>1996 - 1998</td>
<td>Expected</td>
</tr>
</tbody>
</table>
Table 2.4  Component use of international community funds

<table>
<thead>
<tr>
<th>Project</th>
<th>Country</th>
<th>Funds allocation (N$)</th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Technical assistance</td>
<td>Vehicles &amp; equipment</td>
<td>Training of local staff</td>
<td>Other activities</td>
<td></td>
</tr>
<tr>
<td>Vegetation mapping (I-II)</td>
<td>Sweden</td>
<td>300,000</td>
<td>1,400,000</td>
<td>100,000</td>
<td>2,921,000</td>
<td>4,721,000</td>
</tr>
<tr>
<td>National remote sensing centre</td>
<td>Denmark</td>
<td>1,040,000</td>
<td>1,100,000</td>
<td>660,000</td>
<td>200,000</td>
<td>3,000,000</td>
</tr>
<tr>
<td>Institutional strengthening (I-II)</td>
<td>Finland</td>
<td>2,916,000</td>
<td>660,000</td>
<td>94,000</td>
<td>430,000</td>
<td>4,100,000</td>
</tr>
<tr>
<td>Forest Fire Control</td>
<td>Finland</td>
<td>335,000</td>
<td>275,000</td>
<td>125,000</td>
<td>165,000</td>
<td>900,000</td>
</tr>
<tr>
<td>Forest Inventory</td>
<td>Finland</td>
<td>1,700,000</td>
<td>1,000,000</td>
<td>200,000</td>
<td>400,000</td>
<td>3,300,000</td>
</tr>
<tr>
<td>National tree seed centre</td>
<td>Canada</td>
<td>1,900,000</td>
<td>300,000</td>
<td>440,000</td>
<td>160,000</td>
<td>2,800,000</td>
</tr>
<tr>
<td>Forest research and development</td>
<td>United Kingdom</td>
<td>1,733,000</td>
<td>480,000</td>
<td>523,000</td>
<td>774,000</td>
<td>3,510,000</td>
</tr>
<tr>
<td>Kavango forest support</td>
<td>Luxembourg</td>
<td>300,000</td>
<td>900,000</td>
<td>150,000</td>
<td>342,000</td>
<td>1,692,000</td>
</tr>
<tr>
<td>Support to forestry sector</td>
<td>Australia</td>
<td>320,000</td>
<td>370,000</td>
<td>560,000</td>
<td>250,000</td>
<td>1,500,000</td>
</tr>
<tr>
<td>North-Central community forestry</td>
<td>Denmark</td>
<td>3,750,000</td>
<td>1,145,000</td>
<td>1,150,000</td>
<td>720,000</td>
<td>6,765,000</td>
</tr>
<tr>
<td>Volunteer services to forestry</td>
<td>Germany</td>
<td>350,000</td>
<td>700,000</td>
<td>0</td>
<td>0</td>
<td>1,050,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>14,644,000</td>
<td>8,330,000</td>
<td>-402,000</td>
<td>6,362,000</td>
<td>33,338,000</td>
</tr>
</tbody>
</table>

2.4.3  Forest-related public institutions

Ministry of Finance

The Ministry of Finance determine the amount of financial resources allocated to the Directorate of Forestry for implementation of public forestry programmes. At the moment the Treasury is able to allocate sufficient financial resources towards the implementation of public forestry programmes.

National Planning Commission

The National Planning Commission is responsible for the preparation of development budgets and co-ordination of the international community support towards national development efforts. The expanding international community support to forestry development programmes in Namibia will require the National Planning Commission to assume a high profile in the effective co-ordination of externally supported projects and their implementation. The co-ordinating efforts by the National Planning Commission will determine the effectiveness of utilisation of the international community funds in the forestry sector development.
Ministry of Agriculture, Water and Rural Development

Forestry vocational and technical education is currently offered through Ogongo College of Agriculture. In addition, the Ministry also executes specific programmes that have got agroforestry components, and has a training extension service. The Ministry may also affect forestry negatively through sponsorship of programmes that create competition for land and encourage over grazing in forest areas.

Ministry of Lands, Resettlements and Rehabilitation

This Ministry is bound to have positive structural impacts on the management of forest resources in the country through the proposed:

- Land Use and Environment Board
- Land Boards
- Land tenure

Land Use Environment Board. This is a Government advisory agency created by an Act of Parliament that will promote integrated natural resource management through, inter-sectoral co-ordination of land-use activities. The agency will be a decentralised public institution with subordinate structures at regional levels advising on and co-ordinating resource planning activities. Implementation of sector plans through this body will minimise non-forestry sector adverse impacts on forest resources from the non-forestry sector.

Land Boards. The land policy proposes the setting up of Land Boards at regional and local levels falling directly under the Ministry of Lands, Resettlements and Rehabilitation. The main functions of the Boards will be twofold; to allocate land in rural areas based on land-use zoning, and to resolve land conflicts. The two functions of the Boards will promote participatory planning and natural resource allocation to the advantage of sustainable forestry management.

Land tenure. The land policy is proposing leasehold tenure arrangements to individuals, groups of people and communities as an incentive to encourage investment on land, which may include planting of trees and lead to an expansion in farm forestry. In the communal areas where most of the national forests are located, the land policy is proposing community leasehold tenure option, where title will be given to a community with a recognisable boundary. The community will be expected to manage and control its resources for the benefit of its members. Members of the community that will take this option will have to plan together and define benefit levels from the management of the natural resources. Individual leasehold tenure is proposed for resettlement areas. This tenure option will also be extended to cooperative groups on resettlement schemes. The proposed tenure arrangements are intended to give settlers a reasonable degree of security for investment on land, and maintaining natural forest resource base in sound condition.
Development Brigade Corporation

Development Brigade Corporation is a State parastatal that employs ex-combatants in various forestry activities, particularly in the Northern part of Namibia.

2.4.4 Co-ordination

Forestry activities require a high degree of inter-sectoral co-ordination especially on issues of land use and land tenure. Within the Ministry of Environment and Tourism itself, there is co-ordination at the management level. However, the co-ordination at the Ministry level is at the moment not translated into collaboration in the field where operational activities take place. Purposeful inter-ministerial co-ordination that would support implementation of forestry programmes is at the moment negligible.

2.4.5 Proclamation of Forest Reserves

With the exception of East Caprivi State forest reserve that covers 160 000 ha, Namibia has no tradition of government forest reserves. However, the 1992 Forest Policy Statement has proposed that 10% of the total land area should be gazetted as state forest reserves. The proposed proclamation of reserves as specified in the 1992 National Forest Policy for Namibia is shown in Table 2.5.

Table 2.5 Proposed target areas for forest reservation

<table>
<thead>
<tr>
<th>Region</th>
<th>Total area (sq.km)</th>
<th>Proposed reserve areas (sq.km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caprivi East</td>
<td>11 533</td>
<td>2 526</td>
</tr>
<tr>
<td>Caprivi West</td>
<td>5 300</td>
<td>3 000</td>
</tr>
<tr>
<td>Kavango</td>
<td>45 655</td>
<td>20 544</td>
</tr>
<tr>
<td>Ovambo</td>
<td>51 800</td>
<td>10 000</td>
</tr>
<tr>
<td>Damara</td>
<td>46 560</td>
<td>4 000</td>
</tr>
<tr>
<td>Kaokoland</td>
<td>58 190</td>
<td>5 000</td>
</tr>
<tr>
<td>Bushmanland</td>
<td>18 468</td>
<td>12 000</td>
</tr>
<tr>
<td>Hereroland</td>
<td>68 449</td>
<td>20 000</td>
</tr>
<tr>
<td>Rehoboth</td>
<td>14 216</td>
<td>100</td>
</tr>
<tr>
<td>Namaland</td>
<td>21 120</td>
<td>300</td>
</tr>
</tbody>
</table>

During the period covered by the National Development Plan 1 (1995 - 2000) the Government intends to gazette about 3.3 million ha (2 million ha in Okavango region, 1 million ha in former Ovambo region and 300 thousand ha in Caprivi region) as state forest reserves. So far, 75 000 ha of forests in Okongo have been gazetted, and the following areas are about to be declared state forest reserves (Ongandjera 128 200 ha, Uukwaliudhi 153 000 ha and Uukolonkadhi 111 700 ha).
Summary

This chapter has analysed recent trends in consumption of forest products and services, and presented their consumption outlook. The capacity of the forestry sector to meet the demand for forest products and environmental benefits emerging from the domestic economy has been examined. The analysis has shown that the capacity of the national forest resource base to meet the future demand for forest products and environmental benefits, is at the moment a grey area due to lack of information on woody vegetation biomass. However, the on-going inventory project will soon resolve this problem by providing the requisite information. Another major constraint in the forestry sector is the lack of public technical capacity for effective forest policy implementation. The issue of emerging trend in gazetting land as state forest reserves has been pointed out. The wisdom of introducing state forest reserves in Namibia is critically examined in the following chapter. In addition, based on the analysis of demand and supply balances, issues pertaining to: a) production of the multiple goods and services provided by the forests, b) protective functions of the forests with respect to soil, water and biodiversity and c) participation of stakeholders in forestry management; are also identified and examined in the following chapter. Resolutions to these issues that will ensure sustainable management of the natural forests in Namibia are proposed.
3. CHALLENGES TO SUSTAINABLE FORESTRY MANAGEMENT

3.1 Production

Productive uses of forests supply multiple goods and services to meet human basic needs, generate income and employment, and ensure self-reliance. Production issues pertaining to the following forestry activities are examined:

- Production forestry
- Environmental forestry
- Processing of forest products

3.1.1 Production forestry

*Management and utilisation of natural forests*

The three main issues in the productive uses of Namibian woody vegetation resources are:

- Silvicultural information constraint to natural forests management
- Lack of inventory data on wood biomass
- Under-exploited income potential from recreation and ecotourism

*Silvicultural information as a constraint.* Limited information on natural forests precludes the design of appropriate silvicultural management practices, optimal planning, implementation and control of their exploitation. Missing information on the value of their environmental services leads to under-valuation of the land they occupy and consequently its conversion to other land-use purposes, particularly agriculture. Hence, *sustainable management of the natural forests requires breakthroughs in research to provide silvicultural information undertaken either domestically or imported from countries with similar conditions.*

*Lack of wood biomass information.* The prevailing state of skimpy wood biomass information for both planning and operational management purposes is due to the past negligence of forestry sector development. The Directorate of Forestry is currently undertaking inventory of the major national forest resources, and once this information is available it will enhance the strategic and operational planning of forestry management.

*Unrealised ecotourism income potentials.* There is substantial income generation potential that could be realised from the natural forest resources if managed for recreation and ecotourism. The main constraints to the realisation of this income potential are under-developed infrastructure that should spur the supply and demand for these services and incentives that should encourage investment in facilities to cater for consumers of these services. *To exploit income potentials in recreation and ecotourism will require requisite public investment in infrastructure (roads, water supply, telecommunication, etc.) and design of incentive schemes for private sector investors.*
Smallholder forestry management

Smallholder forestry management refers to ownership and management of forest land by individuals who do not also maintain further processing capabilities beyond their own personal uses. Forestry activities of smallholder management include: farm forestry, agroforestry, community forestry, social forestry and joint forest management. Most forest products in Namibia that satisfy domestic rural consumption needs are obtained from natural forests. The major issue in smallholder forestry management is lack of tangible tradition in integration of tree growing into agricultural systems. Promotion of farm forestry will require the design of land tenure that will make the farmers in the communal areas the de facto managers of the land they farm, and market incentives to encourage long-term investment in tree growing. The proposed tenure changes in the land policy by the Ministry of Lands, Resettlement and Rehabilitation, that seeks to promote leasehold tenure arrangements to individuals, groups of people and communities will constitute a strong incentive that will encourage long-term investment in farm forestry. Moreover, farm forestry is likely to become a viable land use alternative, as forests in communal areas where population is increasing are cleared to provide land for agricultural production.

Plantation forestry

Arid and semi-arid conditions that cover much of Namibian land present a challenge to plantation forestry. The North and North-Eastern parts of the country that possess relative medium potential land for tree growth may support limited plantation forestry. The main issue in these areas is therefore to; undertake provenance trials to establish appropriate species for plantation forestry that could make the country self-sufficient in selected plantation wood products.

3.1.2 Environmental forestry

The greatest social benefit of managing Namibia forests may be accounted for by the unquantified indirect contribution of their environmental services to the national socio-economic development process. They have a high comparative advantage in; a) conservation of biodiversity, soil and water resources, b) maintaining water catchment and c) in acting as carbon sinks. Social supply problems constitute the main issue in forests environmental conservation. The underlying cause of social supply problems in management of forests for environmental benefits is poverty and low income levels. The negative welfare affects of poverty affect the provision of the expected environmental services of biodiversity, watershed and the mitigating impact of forests on climate change.

Biodiversity conservation. Although citizens of rich countries more clearly anticipate the future economic importance of forests biodiversity conservation, poor households in Namibia where the forests are located exhibit improvident consumption behaviour harmful to the provision of the expected benefits of biodiversity conservation.
Protection of Watersheds. Families residing in watershed areas utilise catchment forests and cultivate the land in order to meet their basic households requirements. Poverty and low income levels constraint the households willingness and ability to invest in conservation farming techniques that would ensure provision of off-site environmental benefits such as control of soil erosion. The inability of the households to adopt conservation farming techniques is also exacerbated by the market failure that precludes income compensation for provision of off-site benefits of watershed protection.

Forests carbon sequestration. The social problem of climate change is the mismatch between the non-exclusive global impact and the more identifiable and general locations of forest production or control. On the one hand, future adverse global impacts from the build-up of atmospheric carbon dioxide on the climate are most keenly anticipated by citizens of rich countries. On the other hand, deforestation is taking place in developing countries where the majority of poor people (including Namibia) live. The challenges these social supply problems pose require allocation of international resources to conserve biodiversity and prevent global warming, and domestic resources to ensure the provision of local forest environmental benefits.

3.1.3 Processing of forest products

Namibia’s domestic forest products processing industry is still under-developed. The issues in processing of forest products are mainly of policy nature and consequently require requisite policy solutions.

Sawmilling sector

The sawmilling sector that could be supported on a limited scale by domestic forest raw materials is at the moment moribund. There are various reasons for this: a) in the absence of information on the wood biomass that can be harvested on a sustainable basis, the Directorate of Forestry is at the moment unable to estimate the sawmilling capacity that can be supported by domestic wood supply without causing land degradation and deforestation. b) the Directorate of Forestry would like to divest itself of the responsibility of managing the existing sawmills in the country, that happen to be all Government owned, to the private sector as a strategy of enhancing the efficiency in utilisation of forest resources. c) the existing sawmilling technology and management are so inefficient that the mills are operating at a loss. To increase efficient management and utilisation of forest resources, Government should divest state-run sawmills (that generally benefit from subsided access to raw materials and tax exemptions) to the private sector. This, in combination with better forest resource pricing, will encourage the emergence of more efficient and competitive sawmill industry.
Ornamental wood products

The country has the potential of operating cottage industry for wood carvings for the export market. However, the existing wood carvers employ inefficient techniques for both harvesting wood from the forest and conversion of the wood into carvings. Moreover, the quality of the wood carvings they produce is very poor. The national economy could benefit more from the exportation of dead mopane roots if the domestic value added process was improved. Increased benefits from value added require Government assistance through creation of an enabling framework for the ornamental products by; expanding markets and strengthening capabilities along the marketing chain through training, research and technology transfer.

Non-wood products

Although the country has the income potential in processing non-wood forest products, currently there is none taking place. To realise the income potential of non-wood products, extractive reserves (to which local people have sole access rights) should be established in areas with special potential for producing sustainable yields of economically important non-wood products. Moreover, incentives to manage such reserves, or tree stocks on agricultural land, are strong if good marketing links are in place, and small scale manufacturing enterprises with strong backward linkages to non-wood forest products are promoted.

The major production issues and their proposed resolutions are presented in Table 3.1.

Table 3.1 A summary of production issues and their proposed resolutions

<table>
<thead>
<tr>
<th>Activities</th>
<th>Issues</th>
<th>Proposed resolutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production forestry</td>
<td>• Silvicultural constraints</td>
<td>• Research on trees species</td>
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<tr>
<td></td>
<td>• Forest inventory data</td>
<td>• Resource assessment</td>
</tr>
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<td></td>
<td>• Exploitation of ecotourism potential</td>
<td>• Public investment and private sector incentives</td>
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<td></td>
<td>• Lack of tradition in farm forestry</td>
<td>• Farm households tenure and market incentives</td>
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<td></td>
<td>• Harsh conditions for plantation forestry</td>
<td>• Plantations species</td>
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<td></td>
<td></td>
<td>• Provenance trials</td>
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<tr>
<td>Environmental forestry</td>
<td>• Social supply problems</td>
<td>• Mobilise financial resources to conserve biodiversity and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Catchment forests</td>
</tr>
<tr>
<td>Processing of forest products</td>
<td>• Inefficient sawmills</td>
<td>• Divest state-run sawmills</td>
</tr>
<tr>
<td></td>
<td>• Insufficient value added</td>
<td>• Enabling framework</td>
</tr>
<tr>
<td></td>
<td>• Exploitation of non-wood</td>
<td>• Create extractive reserves</td>
</tr>
</tbody>
</table>
3.2 Protection

Protection of forest resources from negative impacts arising from activities outside the forestry sector and inappropriate institutional structures will ensure their sustainable supply of consumption goods and services, and indirect environmental benefits of soil, water and biodiversity conservation; for the welfare of the present and future generations. The main protection issues envisaged with respect to forest resources in Namibia are:

- the effect of uncontrolled and accidental fires,
- the emerging population pressures on the forest resources,
- the inability of the traditional state forest reservation to protect forest resources,
- inadequate partnership between the Government and non-governmental stakeholders in forestry development,
- ill-defined forest policy that constrain access to and the use of forest resources by people dependent on them,
- policy failures outside the forest sector.

3.2.1 Uncontrolled and accidental forest fires

Shifting burning of woodlands in preparation of agricultural land and hunting patches has a long tradition in Namibia. In some parts of the country, the decline in nomadic life is leading to repeated burning of the same patches of woodlands with adverse effect on regeneration of timber species, fruits and vegetation in general. In other parts of the country, increased incidence of uncontrolled and accidental fires is severely retarding the growth of timber in the forests. In order to increase the inventory of national forest resources; the occurrence and severity of uncontrolled and accidental forest fires has to be reduced, and the policy of burning off patches of woodlands to improve hunting grounds should be changed to one of using fire only as a controlled tool under specific circumstances.

3.2.2 Population pressure

Namibia population is estimated to be about 1.7 million. The largest proportion of the population (about 1.2 million) live in the North and North-East parts of the country. These regions happen to be the part of the country where the nation’s major forest resources are located. The high population density in these regions is exerting concentrated pressure on the forest resources, which has started to create localised deficits in supply of wood products; particularly firewood and construction poles. Although there is no acute scarcity of these products, nor a serious general degradation of the forest resources, there are already signs of a starting process of deforestation and forest degradation. Moreover, the present social and political efforts, aimed at enhancing economic growth and national welfare, could if not handled appropriately, speed up this process. To pre-empt the negative impacts of population pressure on forest resources will require two measures: a) increased investment in health and education services to accelerate the democratic transition. b) containment of large-scale migration into environmentally fragile areas by carefully planning investment in infrastructure, and by reasserting the land and resource use rights of local populations in return for co-operation in forest protection.
3.2.3 The Failure of traditional state forest reserves

The major forest resources in Namibia are the de jure property of the State. The de facto land managers are the Traditional Authorities that determine communal land use systems. Without legal rights, the communal farmers have no incentive to protect the long-run productivity of the forests. The current efforts of the Directorate of Forestry to protect communal forest resources from improvident exploitation by means of forest reservation and strict control of exploitation through issuance of permits and law enforcement, will require more policing and administrative expense as the pressure on the forests increases. The potential of prosecution may always be a threat to the communal households exploiting the resource, but this threat only reinforces their incentive to harvest what they can before they are actually arrested. Only the communal households who live on the land can police the forests boundaries on a regular and long-term basis. As the resource becomes progressively scarce, Government should consider seriously the possibility of giving the communal farmers both legal and economic rights to forest ownership. The proposed changes to the current land tenure by the Ministry of Lands, Resettlement and Rehabilitation to lease communal land to willing individual farmers and communities, is a move in the right direction because it will vest both legal and economic property rights in farmers and other land users who are able to protect forests on a sustainable basis. The proposed tenurial arrangements should be implemented in order to dampen the emerging trend in gazettement of communal forest areas. The reservation of land for state forest management should take place only when communal and private ownership: a) is unwilling or economically unable to give the land continuing and productive forest management and b) cannot conserve special public interests like watershed and biodiversity conservation, which are important in many forest areas.

3.2.4 Lack of participatory forestry management

Institutionalisation of the old ways of managing forests whereby the Directorate of Forestry as the lead Government agency in the forestry sector, has the monopoly on both management and authority, can no longer ensure sustainable forestry management. Participation of local communities and the private sector is essential for the sustainable use of the forest resources. The active involvement of local communities in management and conservation of forest resources is desirable for the purposes of environmental protection and for significant increases in rural incomes and employment levels. The participation of the private sector is important for the efficient management and utilisation of forest resources. By encouraging and aiding the participation of local communities and the private sector, the Government through the Directorate of Forestry, will be performing one of its most important functions as a facilitator of the sector activities.
3.2.5 Obstructive national forest policy

The 1992 Forest Policy Statement states that: *Principal aims of the Namibian forest policy must be to ensure environmental stability and maintenance of ecological balance which are vital to the sustenance of all life forms, i.e. human, animal and plant sustenance. The derivation of direct economic benefit must be subordinate to the above mentioned principles.* Such principles constitute the core of traditional state approach to sustainable forestry development, where forest resource is put first. According to the traditional approach promoted by the 1992 Forest Policy Statement, forests are conceived as ecosystems that function on ways that depend mainly on: their nature, the environment and the characteristics of the natural system’s relationships involved. The attainment of sustainability is reduced to following a series of working rules about the nature and extent of forestry use and conservation. In this context, every other aspect of the development process is exogenous to forestry development, and represents a negative disturbance to the goals of forestry management. This approach to forestry management has been the source of major failures and frustrations world-wide, and has led to large-scale deforestation and forest degradation. Experience has shown that people will have an inherent responsibility to protect forests only if they derive or see the potential of deriving tangible direct or indirect benefits from the existence of the resource. *The management of forests for the benefit of the welfare of the people should be the raison d’etre for their protection.*

3.2.6 Policy failures outside the forest sector

Ex-sector policies designed for other development objectives but with negative impact on the forestry sector generate adverse pressure on forest resources. The ex-sector policies can be macroeconomic policies designed to affect all sectors alike but having special unintended impacts on the forests, or they can be policies designed to benefit specific sectors like agriculture or industry but spilling over from that sector to negatively affect the forest resources. *Ex-sector policy impact analysis* to determine the origin of the offending policies should therefore become an integral part of implementation of forestry programmes. *Ex-sector policies and projects that negatively affect forestry should be redesigned to reduce their impact on forest resources.* The formulation and implementation of the redesigned policies and projects will require solutions to the problems in co-ordinating policies in large number of disparate and sometimes non co-operating ministries and line institutions. However, the newly created Land Use and Environmental Board will contribute a great deal towards the protection of the forest resource base through its activities of policy impact analysis and co-ordination of the implementation of integrated land use programmes and projects.
3.3 Participation

The discussion in section 1.6 showed that Namibian forest resources are expected to supply a portfolio of outputs and benefits; with some having direct economic returns, others subject to market failure (particularly environmental functions of the forests), and still others yielding net global benefits. The nature of forest outputs and benefits makes it inevitable to have Government-induced forestry development. Consequently, implementation of Government sponsored forestry development programmes must address the issue of stakeholders participation. The issue does not arise in the spontaneous development that is accomplished by the people themselves, through their regular activities, since this development happens precisely because the people initiate it, finance it, and carry it out without having to be called to participate. For popular participation to occur in forestry development programmes initiated and managed by the Government, it must be socially organised so that, economic benefits give people reasons to participate, and public forestry administration arrangements link the decisions of the State bureaucracies to the will of local communities. The main four participation issues in the forestry sector relate to:

- Forest policy formation
- Forest policy implementation
- Public management of policy implementation
- Co-ordination of the activities of stakeholders in forestry development

3.3.1 Forest policy formation

The process of policy formation

Namibian people have in the past depended and will in future continue to depend on the benefits derived from their national forest resources. Their tradition of exploiting forests implies that they already had a host of policies about the use of forests. Some or all of these policies may not have been necessarily good, but people were following them and may still be following them. Therefore, a completely new form of policy cannot be conceived. The prevailing customs and traditions regarding the use of forests should be the starting point of policy formation.

The need for change should arise from the recognition of the fact that currently some potentially valuable forest-related goals are not being achieved satisfactorily, or possible objective is not being realised at all under the existing policies, or objectives are not being achieved as fully as it appears possible to do, or objectives are being achieved in a manner which is not satisfactory under the existing policies. Whatever the case, this should be the basis for proposing specific changes in the existing policy.

Many different people or perhaps all citizens are affected by (or can affect) the achievement of the objectives of forest policy. It is therefore, imperative to adopt a stakeholder approach to policy formation. This approach will entail inputs from a large number of people. By involving a wide range of stakeholders in the policy formation, it will make it possible to capture the value to Namibians of the forests environmental functions, and the value of the wood and non wood products the forest resources produce. These values will constitute the appropriate basis for formulation of objectives that should guide the effective development of the forestry sector.
Formulation of national forest policy and legislation

Namibian values with respect to forests environmental functions and products, as determined through the process of policy formation forms the basis for formulation of the national policy and legislation. Policy formulation is an important process, but a narrower one than policy formation. It is the responsibility of the Directorate of Forestry, and should be complemented with expert contributions from planners, economists and lawyers. Forest legislation should be a sound legal instrument that should implement the national policy effectively. It should provide for an efficient forest resource tenure that should prevent open access that leads to poor forest management. To achieve this, it should provide local communities and user groups interested in managing forest resources with secure use rights. The user rights should be granted in return for local groups accepting clearly defined forest management responsibilities. In addition, the legislation should recognise; the links between the various forest land-uses and users, integrate and clearly define such notions as joint forest management (i.e. multiple-use management of natural forests), farm, social and community forestry. The legislation also need to codify incentives for managing existing forest resources and creating new tree stocks on agricultural land. The incentives provided for by law should be both politically and budgetary feasible.

Policy formulation must precede the formulation of forest legislation. More precisely, policy formation comes first, policy formulation comes second and formulation of legislation comes last. The legislation effectiveness should be enhanced by interpreting and enforcing it through regulations (or decrees) which must be applied without fear or favour and inflexibly. The policy, on the other hand, must be infinitely flexible, in time and space. Moreover, there is no reason why different regions in Namibia should not adopt different policies. But the national forest legislation must be uniform in order to ensure equitable enforcement.

3.3.2 Forest policy implementation

Assignment of the appropriate roles to stakeholders

Stakeholders capable of executing forestry programmes that should implement the national forest policy will come from:

- Private sector (farm households, local communities and enterprises)
- Non-governmental organisations
- Government
- International community.
The private sector. Inefficiency in implementation of public sector programmes has led to an increasing reliance on stakeholders from the private sector in forestry programmes implementation world-wide. The role of public sector forestry institutions is increasingly being restricted to the functions of policy formulation, exercising of authority in the sector, facilitating activities of stakeholders and organising development efforts in the sector. Market-drive in forestry has now become a major justification of restructuring forestry institutions, in order to enhance efficiency in implementation of forestry programmes. Taking the emerging forestry institutions restructuring experience into account, private stakeholders in forestry sector development are assigned the following roles in policy implementation: a) Farmers and local communities should manage natural forests and plant trees in areas with productive land, for provision of fuelwood, poles, posts, non-wood products and other primary forest products that it is possible to obtain payment for. b) Enterprises should concentrate on establishment of processing industries that should act as forest products supply incentive to farmers and local communities, intensive form of recreation and ecotourism, etc. Private institutional structures set up to administer farmers, local communities and private enterprises participation in forestry development should be favourable to the execution of policies aimed at supplying forest goods and services for which it is possible to obtain payment.

Non-governmental organisations. The responsibility of non-governmental organisations should be to help farmers and local communities to build up the capacity needed to manage forest resources on a sustainable basis. They should also help private entrepreneurs build up the capacity needed to establish and manage forest industries on a profitable basis.

The Government. The Directorate of Forestry as the lead public sector institution in the forestry sector should be responsible for: a) planning, programming, monitoring and enforcement functions. b) reserve and manage forests directly only for those environmental purposes which the private sector could not or would not carry out, e.g.: watershed and biodiversity conservation. c) design politically and budgetary feasible incentives to induce the private sector participation in Government sponsored forestry programmes.

International community. The aim of international community participation in the forestry sector development is to amplify the financial resources, scope and number of Government programmes. International community support to development projects will essentially be discrete, short-lived and should not be expected to last forever. The external support to development projects should be used as a criterion by the Government to determine the priority of forestry sector development. For example, assuming a scenario of zero external financial support; the overall forestry programme that should be financed by the Government should be composed of all forestry projects that make a positive contribution to the process of domestic socio-economic development. This scenario represent the essential core elements of the national forest policy that should be implemented with available domestic resources. In the long-term, international community resources should only be expected to finance projects that produce global benefits, e.g.; biodiversity conservation and prevention of carbon accumulation in the atmosphere that could lead to possible global climate change.
3.3.3 Public management of policy implementation

The organising idea underlying the present administrative structure of the Directorate of Forestry is the traditional approach to sustainable forestry management. The source of this idea is the 1992 Forest Policy Statement. According to the traditional approach to forestry management; the design and strict implementation of optimal silvicultural management regimes is a necessary and sufficient condition for achieving the goal of sustainable forestry management. The optimal silvicultural regimes determine policy prescriptions such as maximum allowable cut. Development of the Directorate of Forestry administrative structure on the basis of the organising idea derived from the current national forest policy, will ultimately lead to a traditional Forestry Department whose main functions are to: a) manage the forest resources by following certain prescribed optimal silvicultural regimes. b) design concessions consistent with the prescribed optimal silvicultural regimes. c) carry out research and forest inventory to improve the knowledge about the legitimacy of the silvicultural regimes. d) carry out development programmes and projects with the help of donor sponsored technical assistance represented by a supply of consultants who are to improve the knowledge about the prevailing silvicultural regimes. The present organising idea underlying the development of the management structure for the Directorate of Forestry is clearly inconsistent with the stakeholder forestry development approach advocated for in this Plan.

An organising idea consistent with the stakeholder development approach is the new forestry approach. This approach explicitly recognises the role played by people and the socio-economic system in attaining sustainable forestry management, which are assumed exogenous in the traditional forestry management approach. According to the new forestry approach that has been proposed in the Plan, successful implementation of forest policy through development programmes and projects requires the participation of forestry stakeholders. Forests must be seen to have an economic value to stakeholders, and can be used to fuel economic development and alleviate poverty in order to achieve the objectives of sustainable forestry management. Forestry field programmes proposed in chapter 4, are consistent with the new forestry approach. The basis of designing an improved organisation for the Directorate that takes into account new forestry focus, should be zoning for optimum forest land-use. The envisaged categories of forest land-uses are; natural production forests, farm forestry and strategic forests. These concepts of various categories of forest land-use are explained in chapter 4. Development of the administrative structure consistent with the new forestry approach, should explicitly take into account the essential requirements of; natural production forests, farm forestry and environmental forestry; as discussed in chapter 4.
Competent skills will be an indispensable asset to the effective performance of the proposed new administrative structure for the Directorate of Forestry. In this respect, an important component of capacity building for the new administrative structure is the recruitment of a wider range of skills. The organisation personnel should be a combination of line staff (comprising technical forestry specialists) and specialised knowledge support staff (comprising expertise from other disciplines including agriculturalists, agroforesters, range managers, ecologists, rural sociologists, public relations experts, natural resource economists, statisticians and planners), to ensure effective cross-sectoral implementation of new forestry focus programmes. The optimal number of personnel in the Directorate and their corresponding requisite qualifications should be derived from the policies to be implemented. Such policies will include: a) traditional forestry functions pertaining to planning, operational management, protection and harvesting; and b) new forestry agenda items dealing with biodiversity conservation, watershed management, non-wood forest, production, environmental tourism, multiple use management of natural forests and farm, social or community forestry.

3.3.4 Inter-sectoral co-ordination

The stakeholder approach to the implementation of forestry programmes and projects will demand a high degree of inter-sectoral co-ordination on issues of: sustainable land management and environmental stability, farm forestry and extension, income generating activities, rural development and desertification, tourism, education and professional training.

It is envisaged that co-ordination of implementation of the Strategic Plan will be undertaken by various committees at the National, Regional and District Levels.

Co-ordination at the National Level

Co-ordination at the National Level should be undertaken by the following committees:

Inter-Ministerial Forestry Strategic Plan Co-ordinating Committee. This Committee should be composed of the following:

- Permanent Secretary, Ministry of Environment and Tourism - Chairperson.
- Permanent Secretary, Ministry of Finance.
- Director General, National Planning Commission.
- Permanent Secretary, Ministry of Lands, Resettlement and Rehabilitation.
- Permanent Secretary, Ministry of Agriculture, Water and Rural Development.

This Committee will be responsible for general forestry development co-ordination and formulation of policy on issues touching on the implementation of the Forestry Strategic Plan. In addition, whenever it deems necessary, it could establish a consultative group at the national level on the implementation of the Forestry Strategic Plan in which the private sector and non-governmental organisations should be allowed to participate.
Forestry Strategic Plan Task Force. The Strategic Plan Task Force will work under the direction of the Inter-Ministerial Co-ordinating Committee and should be composed of the following:

- Permanent Secretary, Ministry of Environment and Tourism - Chairperson.
- Director of Forestry.
- Director of Environmental Affairs.
- Director of Resource Management.
- Director of Tourism.
- Director of Land Use and Environmental Board.
- Representative from the Ministry of Trade and Industry.
- Director of Planning.
- Director of Agricultural Extension Services.
- Representative from the Ministry of Mines and Energy.

The Task Force should be responsible for co-ordination and monitoring of the implementation of the Forestry Strategic Plan. In the Task Force, the Land Use and Environmental Board, the National Planning Commission and the Directorate of Environmental Affairs should ensure that, effective policy impact analysis is carried out to prevent the implementation of projects outside the forest sector that have negative structural impact on sustainable management of the national forest resources. It will also identify bottlenecks in implementation of the Plan. It will forward its recommendation on the policy impact analysis and bottlenecks on action to be taken to the Inter-Ministerial Forestry Strategic Plan Co-ordinating Committee for appropriate action.

Forestry Planning Unit. This will be a unit in the Directorate of Forestry charged with the responsibility of overseeing the day-to-day implementation of forestry projects and giving necessary guidance to the District, Regional and Ministerial Co-ordinating Committees. It will also be responsible for Co-ordination and Collaboration of efforts within the Directorate of Forestry itself that should lead to the concentration of the Directorate resources on certain activities at critical times.

Regional Level Co-ordination

Co-ordination of Forestry Strategic Plan at the Region should be promoted by the Ministry of Environment and Tourism. The membership of this Committee should include:

- Regional Governor - Chairperson.
- Director of Forestry.
- Chief Foresters.
- Representative of Land Boards.
- Representatives of Regional Development Authorities.
- Representatives of Non-Governmental Organisations.
- Representatives of Parastatals.
- Representatives of Land-Based Government agencies.
- Representatives of Private Sector and Community-Based Organisations.
District Level Co-ordination

Co-ordination of Forestry Strategic Plan at the district level should be carried out through various development committees. These committees should explicitly take into account the participation of women, local communities, non-governmental organisation and any other relevant grassroots organisation. Details on the composition and functions of these committees should be approved by the Regional Governor.

The committees at the district level should ensure the Directorate of Forestry active collaboration (i.e., working jointly) with other sectors in implementation of operational activities. Joint implementation of operational activities will serve as an impetus to the institutionalisation of inter-sectoral co-ordination at the policy decision making level.

Summary

This chapter has dealt with the three imperatives of forest policy; Production, Protection and Participation. They are absolute requirements (sine quo non) which reflect the objectives and pre-requisites of sustainable forestry management. The analysis of the three imperatives has shown that the purpose of preparing the strategic plan for the forestry sector is to explicitly recognise stakeholders, whose interests extend to future generations as well as those of the present. The rights of local communities (community empowerment) who depend on the forest resources have been strongly advocated for. Public forestry administration has been urged to promote closer involvement of this wider constituency in the functions of forestry management. The greatest challenge in conservation is the enhancement of environmental services provided by the forest resources, namely: soil fertility, biological diversity, plant genetic resources and the potential impact of forest ecosystems on the climate. To expand the forest resource base and maintain a national forest cover that will ensure the provision of these services, public management of the implementation of national forest policy should become less paternalistic and instead promote guidance, planning, incentives and grassroots participation in policy formulation. To implement the intentions of assigning the main responsibility of forestry output delivery to local people will require long-term leasing land tenure arrangements proposed in the new land policy pending Government approval. The following chapter presents strategic development of Namibian forestry sector. The output from all the analysis and thinking in the preceding chapters is now synthesised into strategic decisions about how public management of the implementation of national forest policy is going to be conducted in the future. The goals that are defined to guide the development of the forestry sector, are derived from long-term objectives guiding the planning of the improvement of Namibian national welfare.
4. GOALS, STRATEGIES AND PROGRAMMES

4.1 The purpose of planning forestry sector development

Implementation of the revised 1992 Forest Policy Statement should contribute to the achievement of national objectives and promote sustainable development. Therefore, the purpose of planning implementation of the Forest Policy Statement is:

<table>
<thead>
<tr>
<th>Directorate of Forestry Mission Statement</th>
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<tbody>
<tr>
<td>To practice and promote the sustainable management of forests and other woody vegetation with the involvement of local communities, in order to supply products and services to enhance socio-economic development of Namibians, while maintaining and enhancing the other environmental and conservation functions of the resources.</td>
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4.2 Goal-setting

National objectives

The four long-term objectives that guide planning of sector development contributions towards the improvement of Namibian national welfare are:

- Reviving and sustaining economic growth
- Creating employment opportunities
- Alleviating poverty
- Reducing inequalities in incomes

The following four priority sectors have been identified for planning national development:

- Agriculture and rural development
- Education and training
- Health care
- Affordable housing

In addition, when addressing the priority sectors, the Government attaches emphasis to employment effects.

Shared (inter-sectoral) goals

Promotion of sustainable development requires the forestry sector to adopt a partnership development strategy with other sectors in the national economy, particularly land-use sectors. This approach ensures a broader natural resource management perspective. To guarantee sustainable development, it is obligatory for forestry goals to be integrated with the goals of other related sectors. An effective way of achieving inter-sectoral development is through shared goal-setting and coordination of policies at the inter-ministerial level, and collaboration at the programmes and projects implementation level. Inter-sectoral Policy Impact Analysis represents the most logical basis for shared goal-setting. This analysis will enable the
sectors that have agreed to harmonise their programmes to determine the best goals to pursue that have minimal or no adverse impact on each other.

The three goals which are relevant to the planning of other sectors in Namibia, and to which implementation of forestry programmes may contribute towards their achievement are:

- Promotion of economic growth in the rural areas
- Promotion of environmental protection for the welfare of the present and future generation
- Development of national capacity to manage traditional Government tasks and development projects

**Forestry sector goals**

Forestry goals must satisfy two conditions:

- **First**, they must be consistent with the stakeholders expectations from the forestry sector.
- **Second**, they must be consistent with long-term national development objectives.

**Stakeholders expectations.** Stakeholders in the forestry sector development and their expectations are described in Table 4.1.

**Forestry goals consistent with long-term national objectives.** The three forestry goals that meet stakeholders expectations and are capable of contributing to the achievement of national objectives through the above specified shared goals are:

- Contribution towards meeting the needs of the rural poor through provision of basic needs (firewood, poles posts and food), generation of communal family incomes, stimulation of the growth of productive off-farm activities in the rural areas
- Maintenance of the protective functions of forests with respect to soil, water and biodiversity vital for the welfare of the present and future generations
- Strengthening of competent performance of forestry institutions

The common goals of planning the national economy, the inter-sectoral goals relevant to the forestry sector and the specific goals that should guide development of the forestry sector, are shown together in Table 4.2.
Table 4.1  Stakeholders in forestry sector development and their expectations

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmers (particularly women)</td>
<td>• Firewood as a source of energy for cooking</td>
</tr>
<tr>
<td></td>
<td>• Food collected from forests as a source of nutrition for good health</td>
</tr>
<tr>
<td></td>
<td>• Basketry and wood tools for domestic chores</td>
</tr>
<tr>
<td>Local communities</td>
<td>• Poles and posts for building and fencing</td>
</tr>
<tr>
<td></td>
<td>• Medicine for good health</td>
</tr>
<tr>
<td></td>
<td>• Fodder for livestock</td>
</tr>
<tr>
<td></td>
<td>• Beverages</td>
</tr>
<tr>
<td>Non-governmental organisations</td>
<td>• Local communities participation in forestry management</td>
</tr>
<tr>
<td></td>
<td>• Women empowerment through participation in forestry activities</td>
</tr>
<tr>
<td>Private enterprises</td>
<td>• Raw materials for industry</td>
</tr>
<tr>
<td></td>
<td>• Income generation opportunities from forests environmental services</td>
</tr>
<tr>
<td>Government</td>
<td>• Contribution to rural economic development through job creation and income generating activities</td>
</tr>
<tr>
<td></td>
<td>• Environmental conservation</td>
</tr>
<tr>
<td>International community</td>
<td>• Contribution to rural economic development by complementing Government development programmes</td>
</tr>
<tr>
<td></td>
<td>• Conservation of biodiversity and restriction of potential climate change</td>
</tr>
</tbody>
</table>

Table 4.2  Goal-setting for forestry sector development

<table>
<thead>
<tr>
<th>National objectives</th>
<th>Inter-sectoral goals</th>
<th>Forestry sector goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Economic growth</td>
<td>• Rural development</td>
<td>• Satisfy rural households basic needs</td>
</tr>
<tr>
<td>• Employment</td>
<td>• Environmental protection</td>
<td>• Maintain forests protective functions</td>
</tr>
<tr>
<td>• Poverty alleviation</td>
<td>• National capacity building</td>
<td>• Strengthen forestry institutions</td>
</tr>
<tr>
<td>• Equity</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.3 Strategies

To achieve forestry sector development goals, three broad strategies should be pursued. All three must operate within the constraint of weak institutions, because capacity building is a long-term process. The three strategies are:

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First. Farmers and communities should be encouraged to practice smallholder forestry management (i.e. farm forestry, agroforestry, community forestry, social forestry, joint forest management) for local economic development. Land tenure (or appropriate property rights over forest resources), extension, and market incentives should be the main instruments used to encourage the adoption of forestry for local economic development.

Second. The Directorate of Forestry should adopt special silvicultural practices for strategic forests (i.e. all forests which protect important watersheds, biodiversity, and unique natural forests with the potential for ecotourism).

Third. Investment in public sector forestry capacity building should be accelerated in order to strengthen the planning, programming, monitoring and enforcement functions performed by the Directorate of Forestry. Public sector capacity building will also improve the Directorate’s function of facilitating forestry activities of farmers, local communities and the private sector.

4.4 Programmes

At the moment, Namibia has a poorly designed national forest policy and weak public forestry institutions. Investments in major forestry programmes should therefore be preceded by updating of the national forest policy and forestry public sector capacity building. Given the prevailing limitations, only four priority programmes are proposed to implement the above specified strategies. In addition, it is recommended that the implementation of these programmes should avoid the design of single projects dealing with many components and tackling several major issues. Implementation should adopt long-term programme approach characterised by a series of actions and investment operations extending over a longer time horizon. Pilot projects should also be used to develop new approaches for stimulating the private sector and local community involvement in forest resource management and conservation. To ensure financial sustainability, new investments should, where necessary, incorporate an appropriate financing mechanism (e.g., forest fund, revenue sharing, or trust funds). The four strategic programmes central to achieving the goals of forestry are:

<table>
<thead>
<tr>
<th>Programme</th>
<th>Orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public sector forestry capacity building</td>
<td>+</td>
</tr>
<tr>
<td>Community-level management of natural forests</td>
<td>+</td>
</tr>
<tr>
<td>Households management of farm forestry</td>
<td>+</td>
</tr>
<tr>
<td>State management of environmental forestry</td>
<td>+</td>
</tr>
</tbody>
</table>
4.4.1 Public sector forestry capacity building

At the moment, Namibia does not have enough qualified and experienced staff to implement the full range of socio-economic and environmental policy objectives set for the forestry sector. In addition, the Directorate of Forestry as the lead public agency in the forestry sector still requires organisational strengthening to reinforce its capacity to use its financial and staff resources more effectively. The Directorate of Forestry has therefore to undertake both human resources and institutional development, in order to ensure successful implementation of public forestry programmes. This will entail skills enhancement, procedural improvement and organisational strengthening. Skills enhancement will be achieved mainly through: a) strengthening the capacity of the vocational and technical forestry education programme at Ogongo Agricultural College and b) overseas training of the Directorate local staff. The focus of institutional development will be on the Directorate capacity utilisation and absorptive capacity, that should be achieved through national development of forest governance with appropriate support from technical assistance.

The main components envisage for this programme are:

- Updating of the current national forest policy and finalisation of the preparation of the legislation to implement the policy.
- Design and implementation of a more efficient organisational structure for the Directorate of Forestry, including mechanisms for cross-sectoral co-ordination.
- Development of competent human resource base for public management of forest policy implementation.
- Development of sector-wide management information systems including the establishment of: a) a forest database by conducting national forest inventory which should provide information on the current state of forest ecosystem and the biological resources they contain, as well as trends in deforestation and other dynamics relevant to natural resource management and b) monitoring systems to provide regular updates of forest resource assessments.
- Revive the research division to enable it undertake research issues corresponding to the changes in forestry sector activities including: a) a shift from exclusive timber production towards true multiple-use management, b) methods of devolving forest management responsibilities to local communities and the private sector while safeguarding the environment, c) socio-economic constraints to and opportunities for farm forestry and d) tree/crop interactions in agroforestry.

The principal results of the programme’s components and stakeholders responsible for their achievements are presented in Table 4.3.
<table>
<thead>
<tr>
<th>Component</th>
<th>Principal results</th>
<th>Responsible stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy revision and preparation of legislation</td>
<td>Government approved forest policy and legislation</td>
<td>• DoF</td>
</tr>
</tbody>
</table>
| Design and implementation of DoF organisational structure | Efficient organizational structure implemented | • DoF  
• OPM |
| Development of competent human resource base | Adequate qualified local staff available | • MAWRD/Ogongo  
• DoF |
| Development of sector-wide management information systems | Availability of information for forestry planning and operational management | • DoF |
| Revive research division | Availability of an ideas base for implementation forestry programmes | • DoF in cooperation with specific end users |

### 4.4.2 Community-level management natural forests

**Partnership management of natural forests for multiple use.** Involvement of local communities in management and conservation of forest resources is desirable for the purposes of environmental protection and for the increased production of forest products. This involvement is envisaged to contribute significantly to rural incomes, employment and environmental protection. Local communities are unlikely to accept management responsibility, however, without being allocated clear, long-term usufruct rights to the forest resources involved. In practice, this implies that Government should: a) grant custody of forest reserves to local communities or user groups, b) provide them with assistance to use it in a sustainable way for multiple uses and c) grant them permission to extract royalties from outside users. Care has to be taken to ensure that management responsibilities (surface area, enforcement against outsiders, etc.) are realistically set and do not surpass the implementation capacity of the local communities.

**Appropriate framework for community-level forest management.** Most productive natural forests in Namibia are found in the communal areas. Although the communal land legally belong to the State, traditional authorities are responsible for the allocation of land use rights to individual household farmers, and specify simple rules regarding its use. However, traditional authorities common property resource management systems have been eroded by Government intervention, population growth and migration to such an extent that they can no longer provide an appropriate framework for community-level forest management. Therefore, the scope for community involvement should be determined by: a) the local context (especially the type and extent of natural forest ecosystem), b) the various productive and regulatory uses at stake and c) the structure and functioning of specific local communities. *The process of devolving Government responsibility of managing natural forest should take place gradually and be subject to monitoring.* Moreover, Government should retain involvement in mediating in disputes local users cannot resolve, and protecting the rights of the disenfranchised groups such as women and the poor.

The main components envisaged for this programme are:
• Preparation of decentralised forest land use plans to determine economically efficient, socially desirable and environmentally sustainable forest land use. Based on land suitability maps and forestry inventory results, Government in collaboration with the local people should zone communal forest areas into:
  * protection zones where there will be no extraction of forest products,
  * utilisation zones where extraction of forest products will be permitted, provided that it is sustainable,
  * conversion zones where intensive use by the local communities should be permitted. Intensive use should also be permitted in degraded forest areas where individually managed woodlots, agroforestry or communal pasture, may be the only way to provide much needed resources that will relieve pressure on the rest of the forests.

• Formulation of local community forest management agreement that should take care of concerns pertaining to land tenure policies, forest legislation (as described in the above section 3.3.1) and the role of the Directorate of Forestry as the lead Government forestry institution.

• Design of a national incentive system for generating increased local communities involvement in joint forest management including; security of tenure, responsive Government extension services, improved infrastructure and easy access to credit.

• Design and testing of pilot projects for community-level forest management. Devolving of Government responsibility for forest management to local communities is an emerging new approach to resource management that should be tested through learning by doing. This approach cannot be developed through studies alone, it has to be tried in different local contexts in the field, initially on a pilot scale, and carefully monitored and evaluated to distil lessons for future implementation.

The principal results of the programme's components and stakeholders responsible for their achievements are presented in Table 4.4.

Table 4.4 Community-level management of natural forests programme

<table>
<thead>
<tr>
<th>Component</th>
<th>Principal results</th>
<th>Responsible stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communal forest land zoning</td>
<td>Decentralized forest land use plans</td>
<td>• LUEB</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• MET (DoF)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Local communities</td>
</tr>
<tr>
<td>Formulation of forest management agreements</td>
<td>Demarcation of sharing of natural forests management responsibilities</td>
<td>• MET</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NGOs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Local communities</td>
</tr>
<tr>
<td>Design of participatory forest incentive scheme</td>
<td>Increased local involvement in forestry activities</td>
<td>• DoF</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NGOs</td>
</tr>
<tr>
<td>Implementation of community-level forest management pilot projects</td>
<td>Lessons for future implementation</td>
<td>• DoF</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Local communities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NGOs</td>
</tr>
</tbody>
</table>
4.4.3 Management of farm forestry by individual households

Communal areas experiencing population pressure are characterised by declining forest cover and tightly farmed landscape. In these areas, common property resource management has very little potential, as per capita benefits will be extremely low and transaction costs high. The most promising focus for local involvement in forestry is on the creation and maintenance of tree resources on farms. Farm forestry will ameliorate the shortage of basic forest products needs, particularly firewood and fencing posts. In addition, it will contribute to reversing the declining trend in agricultural productivity by conserving soil fertility. The starting point of promoting farm forestry should be through forestry activities which already form an integral part of the household land use economy.

The main components envisaged for this programme are:

- Design of institutional and price incentive scheme, and farm forest products marketing links to induce tree growing by farmers on agricultural land.
- Institutionalisation of co-ordination and collaboration mechanisms with relevant Government and non-governmental stakeholders to promote households farm forestry activities.
- Development of national tree seed production to provide a source of quality seed to supply tree seedlings to farmers.
- Employment of well trained extension field officers, provided with timely and useful advice for farmers, and determination of the farmers-extension officers ratio that maximise their contact with farmers.

The principal results of the programme’s components and stakeholders responsible for their achievements are presented in Table 4.5.

**Table 4.5 Farm forestry programme**

<table>
<thead>
<tr>
<th>Component</th>
<th>Principal results</th>
<th>Responsible stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design of farm forestry incentive scheme</td>
<td>Expansion of tree stocks on agricultural land</td>
<td>• DoF</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ministry of Finance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NPC</td>
</tr>
<tr>
<td>Institutionalization of farm forestry coordination and collaboration mechanisms</td>
<td>Effective tree growing on agricultural land</td>
<td>• DoF</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• MAWRD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NGOs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Farmers (women)</td>
</tr>
<tr>
<td>Development of national tree seed centre</td>
<td>Supply of high quality seed for farmers seedling production</td>
<td>• DoF</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NGOs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• MAWRD</td>
</tr>
<tr>
<td>Employment of well trained extension field officers</td>
<td>Effective tree growing on agricultural land</td>
<td>• DoF</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• MAWRD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NGOs</td>
</tr>
</tbody>
</table>
4.4.4 State management of environmental forestry

Management of dry watershed areas, unique natural forests ecosystems for biodiversity conservation and small patches of woodlands, will mainly produce public goods and external benefits that will not be captured by the provider. The Directorate of Forestry, in collaboration with other relevant Government agencies for natural resource management (e.g., Directorate of Resource Management and Directorate of Tourism and Resorts), should maintain a high profile in management of such strategic forests for environmental protection purposes. Nevertheless, whenever it is envisaged that partnership with local communities, conservation non-governmental organisations and the private sector can contribute significantly to forest policy objectives, they should be involved in the management of national strategic forests through efficient management agreements. Local people or smaller user groups involved in the management of national strategic forests should demonstrate proven resource management capabilities.

The main components envisaged for this programme are:

- **Demarcation of national strategic forests into:**
  - *Watershed and riverine management zones* where there should be limited extraction of forest products.
  - *Biodiversity conservation zones* where there should be limited or no extraction of forest products.
  - *Nature conservation zones* where there should be limited or no extraction of forest products.
- Undertake strategic research, in collaboration with Centre for International Forestry Research, on major knowledge gaps pertaining to the structure, composition, dynamics and silviculture of strategic forests ecosystems.
- Design and testing of silvicultural management regimes for strategic forests.
- Determination of local communities participation in management and conservation of strategic forests.

The principal results of the programme’s components and stakeholders responsible for their achievements are presented in Table 4.6.

**Table 4.6 Environmental forestry programme**

<table>
<thead>
<tr>
<th>Component</th>
<th>Principal results</th>
<th>Responsible stakeholders</th>
</tr>
</thead>
</table>
| Demarcation of national strategic forests     | Watershed, biodiversity and nature conservation forests established | • MET  
• LUEB                  |
| Undertake strategic research                  | Information on management of strategic forests available | • DoF  
• SADC-FSTCU  
• CIFOR                |
| Development of silvicultural management regimes | Proven management techniques established               | • DoF  
• DRM                      |
| Determination of local communities participation in environmental forestry | Partnership with local communities                 | • DoF  
• DRM  
• NGOs  
• Local communities |
Summary
This chapter has clearly defined strategic implications of new institutional mandates for stakeholders responsible for organising development efforts in the forestry sector. Greater local community involvement in production forestry (multiple use management of natural forests, farm forestry and whenever possible environmental forestry) has been strategically justified. Specifically, it has been argued that the involvement of local people in forest management will lead to the achievement of the full range of socio-economic and environmental policy objectives set for the forestry sector. Rather than being directly involved in production forestry, Directorate of Forestry will increasingly support the efforts of farmers and local communities in management and conservation of national forest resources. However, the Directorate of Forestry will need to maintain a high profile in the management of national strategic forests for environmental purposes, mainly because of the externalities involved. In addition, development of public sector technical skills required to fulfil the new mandates outlined in the strategic programmes should be taken up as a matter of priority.
5. **EXPECTED CONTRIBUTION OF THE PROGRAMMES TOWARDS THE ACHIEVEMENT OF SECTORAL AND NATIONAL OBJECTIVES**

The proposed programmes are assessed in terms of the contribution they would make towards achieving the national objectives of: a) economic growth, b) employment and c) equity. The criteria used for the assessment is respectively; value added, job creation, redistribution of income and sustainable development.

A. **Public sector capacity building programme**

*Job creation*

Implementation of the field programmes will create demand for skills to perform both traditional and newer roles of forestry (e.g.; biodiversity conservation, watershed management, local community involvement in forestry management, production of non-wood products, etc.). The demand for skills particularly with respect to managing forests to achieve the new objectives that include social (provision of fuelwood, fodder, building materials, food, etc.) and environmental (conservation of biological diversity, carbon sequestration, etc.); will translate into employment of competent staff. This will create jobs for technical forestry specialists and personnel with expertise from other disciplines such as ecology, economics, law and community organisation.

*National management capacity*

In addition to job creation, this programme will enable Namibia to have a capable civil service that is skilled in managing Government tasks. As the functions of forestry management become more complex and go beyond the traditional tasks, the national economy will benefit from fruits of efficient forestry institutions managed by competent staff.

B. **Community-level management of natural forests programme**

*Redistribution of income*

Partnership multiple use management of natural forests will be implemented in districts where it is ascertained that local communities involvement in forestry activities will lead to significant increases in rural incomes. The increase income levels will come from the sustainable utilisation of the forest resources. Development of extractive activities entailing harvesting of products from natural forests will specifically benefit women, who often control gathering, processing and marketing of non-wood forest products; but have few other opportunities of entering the cash economy. Redistribution of income to the rural areas will further contribute towards the achievement of the social objective of improved rural-urban population migration balance.
Value added and job creation

The possibilities of establishing small-scale processing facilities in the rural centres, will lead to the market expansion of the demand-side opportunities for both quantity and a variety of forest products (wood and non-wood) raw materials. This will create two sources of job employment; at the forestry level which will now be a tool for the production of raw materials for the small-scale industries, and at the industry level through the rise in value added in the sector.

Sustainable development

The main aim of involving local communities in natural forests management is to ensure environmental protection. Local populations are in better off position to police the boundaries of the resource on a long-term basis. The income generated through multiple use natural forests management is the incentive for the local communities to have an abiding interest in protecting the resource.

C. Farm forestry programme

Redistribution of income

This programme will generate income in the rural areas in two ways: a) indirect income generation through making it possible for the rural households to be self-sufficient in fuelwood as their main source of cooking and many other subsistence products they will obtain from tree growing. b) direct income generation through exchange in the market of farm forestry products. The income generation possibilities, particularly the direct income alternative, will empower women who will in most cases be the responsible stakeholders that will implement the programme.

Sustainable development

Income creation from farm forestry will enable farmers to adopt conservation farming practices because they will now be in a position to finance investments in techniques that prevent soil erosion. The ensuing increase in soil fertility will ensure sustainable development by enhancing agricultural production and productivity, and making it possible for the nation to attain the goals of food security and good health care.

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D. Environmental forestry programme

*Foreign exchange earnings*

Conservation of strategic forests will create international demand for ecotourism. The foreign exchange earnings from tourism will contribute towards the nation’s capacity to import capital goods, intermediate goods, raw materials and consumer goods that cannot be produced domestically. Forestry sector contribution to the balance of payments will be appreciated more as the growth in national output and income levels lead to an expansion in import demand.

*Job creation*

The expansion in the tourism industry will generate service jobs in the hospitality industry meeting the demands of ecotourists.

*Redistribution of income*

Local communities will obtain direct and indirect incomes from the expanded tourism industry as well as the light utilisation of strategic forests permitted by the Directorate of Forestry.

*Global resource mobilisation for sustainable development*

Strategic forests protection of biodiversity and sequestering of carbon (to restrict potential climate change) will make it possible for Namibia to meet the requirements of the International Conventions on Biodiversity and Climate Change. This will act as an incentive for the international community to channel more financial resources to projects in this programme e.g., through the Global Environmental Facility.