



**EUROPEAN COMMISSION
DIRECTORATE-GENERAL
DEVELOPMENT**



FOOD AND AGRICULTURE ORGANIZATION

**Sustainable Forest Management Programme
in African ACP Countries**

**EC-FAO PARTNERSHIP PROGRAMME (2000-2003)
EC Tropical Forestry Budget Line
Project B7-6201/98-08/VIII/FOR
Project GCP/RAF/354/EC**

**Experience of Implementing National Forest Programmes
in
NAMIBIA**

Accra, 27 April 2003

EC-FAO Programme on Sustainable Forest Management in

African ACP Countries

**COUNTRY CASE STUDY ON IMPLEMENTATION OF
NATIONAL FOREST PROGRAMMES**

NAMIBIA

WORKING DOCUMENT



A REPORT ON THE FOREST SECTOR OF NAMIBIA

By Harrison Ochieng Kojwang, December 2000

Please note that the views expressed in this paper reflect those of the authors and should not be attributed to any of the institutions.

This paper has been minimally edited for clarity and style.

Introduction

Background to Namibia's Economy

Namibia has the distinction of being the most arid in Southern Africa and carries an estimated population of 1.7 million people on a total land area of 830 000 km². Its relatively small population grew at an annual rate of 3.1% between 1970 and 1980 and at a slightly higher rate of 3.2% per year between 1981 and 1990. The national average annual rainfall figures are about 350-400 mm, with the northeast receiving the highest rainfalls, which average around 700mm per year. Its aridity limits the potential for both agricultural and forestry production. However, its scarce water resources and the natural woodland formations and other vegetation types play major ecological and direct economic roles in its largely rural economy and its industries.

The economy is dominated by the extraction of natural resources of which, mining and fishing are the leading export commodities and the mainstay of its economy. Agriculture is the predominant land use in which livestock ranching, managed as commercial operations dominate in its central plateau savannahs mainly occupied by historically favoured white farmers. The rest of the country also keeps livestock and in the north, which is relatively wetter than the south, substantial cultivation is practiced. However, agriculture contributes only 10% of GDP but employs about 70% of the rural population, in which women are a majority. On the whole, Namibia's economy is best viewed from its primary, secondary and tertiary industries. The *primary industries* are dominated mining, fishing and commercial agriculture. The commercial agricultural sub-sector, traditionally dominated by beef ranching has found a newcomer in the form of commercial table grape farming by irrigation along the Orange River in the south. Forestry is not a major formal industry that is typical of countries with industrial plantations. Instead, it plays a major role in the livestock industry, tourism and domestic energy supply, in addition to construction of shelter. This contribution is not often obvious and has not managed a place in the national accounting system. The *secondary industries* are made up of meat and fish processing, other manufacturing, electricity and water supply. The tertiary industries are driven by the wholesale and retail trades, tourism, financial, real estate, business services, transport and communications. Currently, Namibia is developing a second National Development Plan (NDPII, 2001-2006) in which several assumptions on the growth of the Namibian economy have been made. These are that:

- GDP will grow at an average rate of 5% per year.
- Mining output will increase at an annual rate of 6%.
- Private non-mining output will grow by 52%.
- Government final consumption of goods and services will continue to grow at a restrained rate of 22% annually over the same period.
- Average employment is expected to increase at 22% per year, as will the rate of population growth.
- Budget deficit declining to between 3% and 32% of GDP. Debt growing to 24% of GDP. Both figures remaining stable in the last years of NDP 2
- Total investment, private and public, will grow by an average 5% per year.
- Balance of Trade deficit is likely to deteriorate to 14% of GDP by 2006. The Balance of Payments current account is likely to become negative, at 12% of GDP by 2006.
- In all these assumptions on the economy, the major driving sectors will perform as indicated below:

- Mining will grow by an average of 8.2% during the same period
- Tourism related growth is also estimated at 6% per year between 1999 and 2006
- Meat and Fish processing will also increase annually by 6.4 and 6.7 % respectively
- Commercial agriculture will also show strong growth of about 7% between 2001 and 2004 (expansion of the grape industry)
- The construction industry is also expected to grow annually by 5%

Forestry Development in the National Perspective.

In most countries of Sub-Saharan Africa, the forest sector viewed from existing forest resources and their respective administrative structures, were largely shaped by colonial policies. Indeed, the existence of a number of remaining forest reserves originate from that era. It can also be claimed with lots of credibility that export-oriented markets, fueled by hard currency demands by post colonial Africa has affected the forest sectors in various ways. It is therefore a legitimate exercise in policy analysis and studies of forest history to look at the evolution of the forest sectors of various countries over time and especially to examine how they have reacted to the changing national, regional and global themes related to sustainable development. Viewed in this context, initiatives such as Desertification and Biodiversity Conventions, Tropical Forest Action Plans, National Environmental Action Programmes, Forestry Master plans, Strategic Plans and most recently, National Forestry Programmes have become a rich ground for environmental, socio-economic and even political discourse. Equally compelling and worthy of academic attention by developmental and business economists are macroeconomic issues such as Structural Adjustment Programmes, Liberalization of Markets and Globalization since they affect forests and forestry practice in various ways. It is therefore a logical starting point to postulate that the best place to start to see how forestry has reacted to a changing world is through nationally sanctioned or recognized programmes for development in the forest sector.

Prior to 1990, Namibia, which is in Southern Africa, had no written forestry policy. Given the fact that the bulk of the woodlands exist in the deliberately neglected communal areas of the north from which its apartheid regime was receiving military resistance, the woodlands were governed mainly by coercive and conservation oriented mentalities which did not allow public participation in forest management, made worse by no investment in forest management. Ironically the exploitation of indigenous timber stocks continued to feed South Africa's saw mills and joinery industries. It was therefore not surprising that until recently, rural people have tended to perceive the forest and wildlife services as confrontational arms of government, rather than agencies vital to their sustainable development. Furthermore given the political isolation of the apartheid regime in Namibia and South Africa, Namibia's forest sector was prior to 1990, largely "immune" to international or global initiatives in forest management and even trade.

In 1992, Namibia as a country launched itself into the international arena by attending the Rio Earth Summit, in which it became a signatory to Agenda 21, including the Forestry Principles. Since then, it has acceded to several environmental or natural resource conventions, such as CITES, Climate Change, Desertification and Biodiversity and has been active in their respective discussion sessions. On the forestry scene, Namibia has over the last 4 years participated in the meetings of the African Forestry and Wildlife Commission organized by FAO. It has also participated in meetings of the Southern African Development Community on forestry (SADC-FSTCU). Furthermore, it has been involved in the global forest policy dialogues of the Inter-Governmental Forum on Forests (IFF) and

the Inter-Governmental Panel on Forests (IPF) before it, including the last IFF Meeting in New York which laid the groundwork for the soon to be launched United Nations Forum on Forests (UN-FF).

Defined from a resource context, the forest sector in Namibia is comprised of indigenous woodlands, which occur in four main biomes commonly referred to as the Kalahari Sands Woodlands, the Mountain Savannah Woodlands, the Mopane Woodlands and the Acacia-dominated Savannahs of the Central Plateau of Namibia. In addition to the above biomes, another type of tree formation, though not strictly a biome, but ecologically and economically important, are the riverine or gallery forests on the floodplains or valleys of the predominantly ephemeral and the few perennial rivers. From a traditional forestry point of view, the Kalahari Woodlands provides the bulk of the timber species, such as, *Pterocarpus angolensis*, *Baikiaea plurijuga*, *Guibourtia coleosperma* and *Burkea africana*. The most recent inventory data on the woodlands in terms of total woody biomass and merchantable timber volumes per hectare from variations of the Kalahari and other Woodlands are provided in tables 1 and 2. In addition, the respective areas covered by the woodlands in the northern half of Namibia and other bio-climatic zones are in table 3. Based solely on the occurrence and distribution of merchantable timber volumes and also the biomass statistics, a traditional forester would be forgiven for relegating Namibia's forest sector to the footnotes of any chapter on the forest-rich world. Because of this, Namibia is, and will remain a net importer of industrial wood and wood products (see table 4). Despite being a net importer of industrial wood and wood products, the forest sector, viewed from in the entirety of its functions and direct use values, its contribution is certainly not minor, especially within the arid and semi-arid conditions that nurture the forest resources. A few examples are briefly described to illustrate its "unsung" values.

- The woodlands and the acacia savannahs all together, maintain vegetated ecosystems that are crucial to the livestock industry by being key grazing and browsing habitats. The livestock industry is a major export earner for Namibia and employs a formidable number of Namibians.
- In addition to the livestock industry, the ecosystem value of the woodland and savannah biomes, in addition to the gallery or riverine forests, are the bastions of Namibia's wildlife based tourism industry. Tourism is truly the industry of the future for Namibia, since there not much room for significant growth in the natural resource based sectors such as marine fisheries and mining sectors. Today they are the most important contributors to the Gross National Product. In North-Central Namibia which carry's 50% of its population, fencing of cultivated fields is done using stems and branches of trees. The crop protection function of the woodlands is probably the most underrated or "unaccounted for" agricultural input.
- The majority of Namibians still rely on wood for fuel and construction of shelter. The economic value of these two commodities, are enormous at a national scale. The arts and crafts industry, which has rapidly become an employer of thousands of Namibia, depends entire on the indigenous woodlands and belongs to the cluster of tourism related industries. Species such as *P. angolensis*, *B. plurijuga* and *G. coleosperma* are highly valued for furniture. In addition, *B. africana* has tremendous potential for use as parquet flooring material. Table 5 summarizes the estimated contribution of the forest resources of Namibia to the national economy.

Table 1: Some data on the biomass of various woodland types occurring in Namibia. (Trees with diameter at breast height (DBH) equal or above 5cm were measured.)

Forest/ Vegetation Type	Area Sampled: District/Regi on	Area in Ha	Dominant tree species	Tree height (m)	Mean No. of trees/H a (All species)	Mean tree volume m ³ /Ha (All species) 1	Mean tree Biomass tons/Ha (All species)
Woodlands 20% of Namibia=s land area	Western Tsumkwe District	607 949	<i>Pterocarpus</i> - <i>Burkea</i>	Max 22.3 Mean 7.9 Min 1.5	99	17.8	12.5
	Caprivi: (Salambala)	18 000	<i>Mopane</i> - <i>Terminalia</i>	Max 20.8 Mean 8.4 Min 2.4	140	48.0	12.8
	Kavango: (Nkurenkuru Concession area)	17 815	<i>Baikiaea</i> - <i>Pterocarpus</i>	Max 13.2 Mean 8.0 Min 1.0	114	38.0	20.6
	Caprivi Region	2 009 527	<i>Baikiaea</i> - <i>Burkea</i> - <i>Mopane</i>	Max 23.8 Mean 9.6 Min 0.7	87	21.4	17.7
	Caprivi State Forest	1 46 100	(Degraded) <i>Baikiaea</i> - <i>Combretum</i> - <i>Burkea</i>	Max 24.8 Mean 10.2 Min 0.5	71	33.3	20.8
Savannahs, 64% of Namibia=s land area.	East and South Tsumkwe, Otjinene & Okakarara Districts	8 212 477	<i>Acacia</i> - <i>Terminalia</i>	Max 16.5 Mean 5.8 Min 1.9	101	4.2	3.2
	Ongadjera Community Forest	128 200	<i>Mopane</i> - <i>Acacia</i>	Max 11.1 Mean 6.4 Min 3.4	10	1.1	0.7
	Uukwaludhi Community Forest	82 520	<i>Mopane</i> - <i>Commiphor</i> <i>a</i> - <i>Terminalia</i>	Max 12.3 Mean 5.3 Min 1.7	53	6.3	4.8
	Omusati Region ⁵	1 383 924	<i>Mopane</i> - <i>Terminalia</i> - <i>Acacia</i>	Max 19.2 Mean 5.3 Min 1.0	33	3.2	2.7
	Oshana Region ⁶	259 675	<i>Mopane</i> - <i>Diospyros</i>	Max 16.4 Mean 5.3 Min 1.0	12	1.8	1.2

- 1) Tree volume means the volume of the entire tree comprising of the main tree trunk and branch wood.
- 2) Tree biomass means the biomass of the entire tree comprising of the main tree trunk and branch wood.
- 3) Total number of trees in the sampled area is equal to AMean No. of trees/ha@ x ASize, in Ha@. For example, in West Tsumkwe District: 99 x 607 949 = 60 186 951 trees.,
- 4) Total volume of trees in the sampled area is equal to AMean tree volume m³/ha@ times ASize, in Ha@. For example, for Western Tsumkwe District: 17.8 x 607 949 = 10 821 492 m³.
- 5) ⁵ In omusati Region, tree height includes *Hyphaene petersiana* (Makalani) and *Sclerocarya birrea* (Marura)
- 6) ⁶ In Oshana Region, tree height includes *Sclerocarya birrea* (Marura) and *Diospyros mespiliformis*
- 7) Table 2: Data on two main timber species, *P. angolensis* (Kiaat) and *B. purijuga* (Rhodesian Teak) found in Namibia's woodlands.

Forest/ Vegetation Type	Area Sampled: District/R egion	Size, in Ha	Dominant tree species	Mean No. of trees/Ha (All species)	Timber Species	No. of timber trees/Ha (Rounded to the nearest unit)	Mean timber volume ¹ m ³ /Ha
Woodlands (Covers 20% of Namibia=s land area)	Western Tsumkwe District	607 949	<i>Pterocarpus</i> - <i>Burkea</i>	99	<i>Pterocarpus</i>	Max 6 Mean 1 Min 0	0.31
					<i>Baikiaea</i>	Max 4 Mean 0 Min 0	0.0036
	Caprivi: Salambala	18 000	<i>Mopane</i> - <i>Terminalia</i>	140	<i>Pterocarpus</i> *	0	0
					<i>Baikiaea</i> *	0	0
	Kavango: Nkurenkur u Concession area	17 815	<i>Baikiaea</i> - <i>Pterocarpus</i>	114	<i>Pterocarpus</i>	Max 7 Mean 1 Min 0	0.65
					<i>Baikiaea</i>	Max 6 Mean 1 Min 0	0.28
	Caprivi Region	2 009 527	<i>Baikiaea</i> - <i>Burkea</i> - <i>Mopane</i>	87	<i>Pterocarpus</i>	Max 2 Mean 0 Min 0	0.06
					<i>Baikiaea</i>	Max 12 Mean 1 Min 0	0.75
	Caprivi State Forest	146 100	(Degraded) <i>Baikiaea</i> - <i>Combretum</i> -	71	<i>Pterocarpus</i>	Max 5 Mean 0 Min 0	0.30

			<i>Burkea</i>		<i>Baikiaea</i>	Max 19 Mean 4 Min 0	2.69
Savannahs, (Covers 64% of Namibia=s land area)	Tsumkwe, Otjinene & Okakarara Districts	8 212 477	<i>Acacia - Terminalia</i>	101			
	Ongadjera Forest	128 200	<i>Mopane- Acacia</i>	10			
	Uukwalud hi Forest	82 520	<i>Mopane- Commiphor a - Terminalia</i>	53			
	Omusati Region**	1 383 924	<i>Mopane- Terminalia- Acacia</i>	33			
	Oshana Region	259 675	<i>Mopane- Diospyros</i>	12			

¹Timber volume means the volume of the main tree trunk excluding branch wood. 2) * *P. angolensis* and *B. plurijuga* were not found in the sample in these areas. 3) **There is a little bit of *Baikiaea plurijuga* in the north west of Omusati Region, in Uukolonkadhi Community Forest.

Table 3: Area of land cover types in Northern Namibia

Land cover	Area in Ha	% of land area
Extensive/subsistence cultivation (mainly in forest and savanna areas)	1823936	6.42
Intensive cultivation (Permanent agriculture)	89694	0.32
Forest (areas with trees > 5 m height)	7357876	25.88
Savanna (areas with trees < 5 m height)	15465511	54.40
Other (areas without woody vegetation: open water, omurambas, grasslands, pans etc.)	3693110	12.99
Total	28430127	100.00

Specific Features of the Forest Sector

Before a full Directorate of Forestry was created, the whole country was administered from a tiny Division in the Ministry of Agriculture and the main forestry office was situated in Grootfontein in North Central Namibia. It had only 3 offices in Ondangwa in the North West, Rundu in the near North East and Katima Mulilo in the far North Eastern tip of Namibia. In essence, it represented a weak and centralized system of administration; a very poor combination, which was supported by fairly junior officers in the field offices. The main purpose of the field offices, was mainly to administer, timber harvesting concessions, but with no effective to oversee or facilitate the active management of the woodlands, tree planting and fire control. To date, the forest administration has a

centralized system in which the Head Office performs policy making, planning and financing and other support functions, but with a network of better staffed offices in all political regions of Namibia. This describes a centralized but de-concentrated model of administration. However, the new forest policy and the forest bill have provided for greater public participation, which is tending to decentralize the function of forest management and also tenure rights to resources. As such, community organizations and local governments can now identify and manage community and regional forest reserves, respectively, to which, the local forest offices will provide technical and in some cases, material support. In addition, the whole government has adopted what many see as a progressive policy of decentralization, which will see forestry functions, which are now performed by central government, devolved to communities and regional and or local governments.

Table 4. Consumption of imported wood and wood products (Source Bureau of Statistics, National Planning Commission, Namibia)

Wood Product Category	Unit	1995	1996	1997	1998	Projected * 1999	Total imports
Charcoal	Tons	3,989	845	587	670	683	6,773
Household and Sanitary	Tons	8,422	47,646	34,843	74,390	79,129	244,430
Newsprint	Tons	98	193	191	163	76	722
Paper and Paperboard	Tons	43,700	10,867	11,174	20,470	23,938	110,149
Fibre-, Particle-, Wafer-board		1,656	3,870	3,071	4,341	6,037	18,976
Plywood	Tons	88	450	1,023	2,329	600	4,489
Printed Matter	Tons	4,498	7,229	3,487	5,797	3,330	24,340
Pulp	Tons	90	523	358	1,313	389	2,673
Sawdust	Tons	216	708	40	234	177	1,376
Veneer sheets	Tons	180	177	152	32	218	758
Wood wool	Tons	53	43	89	17	2	203
Wrapping and Packaging	Tons	241	82	380	364	185	1,252
Chip wood	m ³	4,635	6,578	7,277	15,073	12,667	46,230
Fuel wood	m ³	359	357	153	343	276	1,488
Round wood	m ³	1,263	2,340	2,998	4,564	4,693	15,859
Sawn wood Hard	m ³	1,232	636	682	1,929	701	5,180
Sawn wood Soft	m ³	3,307	3,880	4,106	6,984	8,725	27,002
Sleepers	m ³	323	55	6,935	1,212	173	8,699
Value	N\$	351,851,800	366,861,282	418,811,048	542,293,303	507,049,404	2,186,866,837

Table 5. Economic value of the forest resources of Namibia (Source: Modified from Forestry Strategic plan of 1996)

Product	Main species	Value (million N\$)
Construction poles	Mopane	383
Tourism	Ecosystem (e.g. mopane and acacia woodlands in Etosha)	218
Fences for crop protection	Mopane	175
Firewood & Charcoal	Mopane, Acacia spp, Various bush invaders	153.4

Medicine	Various species such as devil's claw	31.5
Homestead fencing	Mopane	31
Crafts and implements; Mahangu baskets; Carvings	Various species; Mopane	34.4
Goat forage	Various species, mainly acacia	9.5
Fencing poles	Mopane	6.6
Food & Beverages	Marula oil, Various species, Manketti kernels	6.3
Basketry	Hyphaene spp (Makalani palm)	4
Commercial logging	Pterocarpus (Kiaat), Baikea (Rhodesian teak)	2.4
Mortar and pestle	Various hardwood	1.5
Ornamental roots	Mopane	1.1
Mopane worm forage	Mopane	0.5
Total Economic Value		1058.2

The Commencement of National Programming in Forestry

In 1994 the Directorate of Forestry without any prodding from any external aid thought that the forest sector could improve if there was a participatory and widely publicized process of forestry development programming that would culminate into a nationally adopted document. The motives behind this were many and a few are described herein.

The forest sector had suffered from benign neglect during the colonial era and had therefore to assert itself among the family of sectors competing for resources to meet the challenges of national development that had been bestowed upon each of them. The creation of a full Directorate of Forestry after existing as a small division under agriculture for over 70 years represented a new political support for the sector and in itself a major challenge for the Directorate to demonstrate its worth in an arid and semi-arid country.

Despite the fact that the forest sector continued to contribute to the national economy, albeit in non-obvious ways, it was not properly recognized. It was not difficult to see that forestry needed recognition to be able to survive and a widely publicized and participatory approach to discussions and planning was important to achieve this.

The national planning process would help forestry's claim to legitimacy in the absence of high volume tropical rainforests or huge industrial plantations

A proper and thorough analysis of the sector was needed to be able to discern and concentrate on programmes that would turn around and otherwise improve the sector.

It was quite clear that donor support would be easier to get if Namibia could develop a clear and comprehensive plan on how it wanted to manage the sector, bearing in mind both the global and local benefits of forest management and protection.

With the above motives in mind, the Directorate of Forestry felt that it was not necessary to adopt any of the expensive and time consuming approaches in National Forestry Programming such as Master Plans, Tropical Forestry Action Plans (TFAP) and National Environmental Action Plans

(NEAPS). Instead Namibia opted for a planning process that we estimated would take about a year to accomplish and termed it a National Forestry Strategic Plan

The Process of Strategic Planning

In a chronological order the process went as follows:

In 1995 the Directorate of Forestry started off with a first *In-House Workshop* in which Headquarter and Field Officers came together to debate the major issues regarding the forest sector. In essence, the Directorate did what is known in workshop jargon as a “*SWOT analysis*”, in which the strengths, weaknesses, opportunities and threats were identified. At the end of the workshop, members identified in a participatory manner, what they perceived as priority areas in which work should be concentrated. This workshop in effect prepared the whole Directorate to the more protracted period that the strategic planning process would require. After the workshop the actual planning started with funding from Finland. *It is important to note that the initiative for strategic planning started within the Directorate of Forestry and the Government of Finland stepped in to give it professional or technical support.* With Finnish funding, the process started earnestly in the first quarter of 1996, when a consultant was hired for a 7-month period to facilitate the process in conjunction with the Directorate of Forestry.

The Ministry commissioned an inter-sectoral task force to oversee and direct the planning process. The task force had the following structure:

It consisted of 4 Directorates within the Ministry of Environment and Tourism (MET) and others from different Ministries.

Director of Forestry (MET)
Director of Environmental Affairs (MET)
Director of Resource Management (Wildlife) (MET)
Director of Tourism and Resorts (MET)

Representative of the National Planning Commission
Director of Lands,
Director Resettlement and Rehabilitation
Director of Planning in Agriculture
Director of Engineering and Extension in Agriculture
Director of Research and Training in Agriculture
Director of Community Development

The main responsibility of the task force was 1) that the analysis of the sector would be rigorous in view of the limitations of time, data and skills and 2) the plan would be consistent the national development policy.

The task force approved a *modus operandi*, which included the commissioning of several consultancies that would help to:

Describe the capacity of the nation to supply various forest products and services

To ensure a multi-sector balance in the planning process

To help define the national challenges to Sustainable Forest Management that would have to be tackled during the implementation

The studies which were commissioned during the process, are hereby listed as follows:

The Most Important Functions of the Forestry Sector in the Namibian Economy

This paper elucidated the obvious and indirect contributions of the sector to the economy. It particularly highlighted the importance of the sector to agricultural production in rural Namibia and also the vital ecosystem functions that support tourism through wildlife habitats. It turned out that timber values ranked tenth on the value of contributions to the economy. This paper revealed the necessity for forest management to take a multi-sector approach to management and a greater participation by beneficiaries such as local communities.

Land Ownership versus the management of woody vegetation and policy resolutions to the prevailing land issues

The paper described land ownership patterns in Namibia and particularly those in the communally owned lands. It was interesting to note that the proposed communal land bill, now being discussed in parliament has provisions for communal leaseholds, meaning that communities can be given titles for land that they wish to communally develop for forestry purposes and in addition the proposed regional land boards will make land allocation more democratic and also enhance public participation in activities such as setting land aside for forestry conservation and plantation development.

Land Tenure Issues in Sustainable Forest Management

The paper described in a stimulating way, the various forms of traditional land tenure systems among the various cultures of Namibia and how statutory laws of the past ignored or contravened traditional systems. It was also show that today cultures differ in the effectiveness of traditional laws hence care must be taken not to overestimate the power of communities to manage forest resources because a lot of their institutions had been eroded. Projects must bear this in mind and make the necessary arrangements to study and empower communities according to the status and effectiveness of their local institutions.

Namibia woody vegetation Resources

This described the resources and earlier attempts to conduct forest inventories and management planning

The Role of Woody Vegetation Resources in Community Development in Namibia

The report presented the objectives and tasks of community development that forestry should take into account and also the institutions that are involved in organizing community efforts. Furthermore it stressed the role of women in rural development and particularly vegetation use and management.

Namibia's experience in National Development Planning

This paper laid out the macroeconomic framework for NDP1, described the planning process, development objectives, issues of finance and implementation strategies.

The Consumption in Wood and Wood Products in Namibia

This paper concentrated on the consumption of industrial wood and reconstituted products such as plywood and boards, paper and paper products. It showed clearly the demand patterns for these products in Namibia. This was a key paper in directing policies that would supply Namibia with these products at the most competitive rates.

Drafting of the strategic plan – Principles and Operational Tools

After the described papers were produced and approved by the National Task Force, they were presented in a national workshop, which was attended by policy makers from the capital city, the international community, regional governors and non-governmental organizations. This gave useful inputs from the various interests represented at the national workshop and gave further impetus to the need to have a multi-sector approach to draw up and also to implement the strategy.

Together with inputs given by the task force, the consultants in conjunction with a team from the Directorate of Forestry started drafting the strategic plan. Draft chapters were thoroughly discussed and critically read by the Director of Forestry before being discussed at the meetings of the Task Force. The experience was that the strong involvement of members of the Directorate ensured that the document would reflect a Namibian rather than a Euro-centric view of forestry development. It also created the right conditions for top members of the Directorate to internalize and own the plan by virtue of their own participation. In that regard the plan was easy to adopt since it was not imposed but steered and negotiated by Namibians in policy-making ranks in government.

The task force in addition to their main responsibilities as already stated operated under key principles. These were

- Forestry development ought to be guided and must contribute to National Development Objectives
- Any planning in the natural resources field requires a thorough analysis of institutional capacities, macro-economic frameworks and general issues of economic performance.
- Forests and forest resources need to have local relevance to justify local investments and in addition, they have global benefits, which should then be balanced with local needs.

The resource papers, which have been described earlier, together with inputs from the taskforce members led to the identification of three major themes that formed the major thrust of the strategic planning exercise. These were the issues around *production, protection and participation*.

Donor involvement in the planning process

As stated earlier, our initiative attracted the support of Finland, a member of the EU as a financing partner. The strategic plan itself started fortuitously, 6 months after the Directorate had started in late 1995, to review and revised the Forest Act under the sponsorship and technical guidance of FAO. The FAO and the consultant to the strategic planning process met on several occasions to discuss and exchange views and documents. In addition they read each other's draft documents. This

ensured that the strategy reflected the new thinking of the Directorate with respect to legislation and the legislation itself made provision for greater public participation and current global policies regarding sustainable forest management.

During the planning process, international agencies such as UNDP, FAO and members of donor countries such as Germany, Denmark, the UK, Netherlands and Sweden attended our national workshops.

A Summary of the Strategic Plan

The Main Elements of the Strategic Plan

The Forestry Strategic Plan has identified and described the main national issues in forestry development categorized under the three main issues of **Production, Protection and Participation**. These three issues in order to tackle them require appropriately trained Namibian personnel in **an institutional framework relevant to today's development objectives**. The Strategic Plan of 1996 describes these as challenges to Sustainable Forestry Development.

The links between the forestry strategy, the current forest policy and new forest bill

The strategic plan produced at the end of 1996, is the most powerful instrument in the implementation of the current policy of 1992 and a revised one. Since it was prepared at a time when the review of forest legislation was underway, it was drafted with full consideration of the, then major provisions of the forest bill. So far, there are no contradictions in the underlying philosophies and directions of the two documents. It should be noted that the drafting of the forest bill started in the last quarter of 1995, a draft bill was produced after several months of consultations and comments in 1997, when the Ministry adopted it. It was approved in principle by cabinet in late 1998, before it went to the Ministry of Justice for legal drafting in early 1999. A legal draft was produced in 1999 and it was presented in Parliament in 2000.

Furthermore the plan has embraced all the major issues of forestry development today, sustainable management, community participation, conservation of biological diversity, increasing the value of forest resources, environmental protection and contribution to the national economy. It has also called for strategic linkages with other partner sectors such as agriculture, lands, tourism, regional and local government, through a steering committee, which is similar to the National Forestry Council contained in the forest bill.

It gives a general direction and approaches to forest management but allows flexibility in operational strategies to achieve. It is highly unlikely that a new forestry policy will heavily conflict with the plan. This is because the very issues that were important to the plan appear to be important to the policy review process.

Major Issues of to be tackled by the Strategy

Production

Production on the Namibian scene revolves around the **management of natural forests** which is quite constrained at the moment by factors such as the lack of appropriate silvicultural technology,

skimpy inventory data on the growing stock, under exploited potential for income generation in recreational use and eco-tourism. Furthermore, the status of forestry on farmlands is hindered by a lack of culture of tree growing and undeveloped product processing and markets. Plantation forestry though there is some potential in the moister Eastern Part of the country is largely constrained by short planting seasons and higher than normal evapo-transpiration rates.

With respect to the **supply of environmental benefits**, poverty and low income levels is a major constraint, since poor farmers will expectedly ignore values such as bio-diversity and watershed conservation if faced with no alternative options but to clear forests and woodlands for food production.

Linked to production is the **processing of forest products**. Despite the scarce timber resources of Namibia, the saw-milling sector does not use appropriately trained people and equipment, hence the rates of recovery after saw milling is barely above 40%. Even then, marketing channels need to be improved for groups of carvers and other craftsmen to get better prices for their crafts. There are also possibilities in the production or manufacturing of non-wood forest products. In this regard, the fruit and kernel of Marula (*Sclerocarya birrea*) and the nuts of *Schinzophyton rautanenii* (mangeti) have market potential as industrial oils. Other indigenous fruits and nuts also have potentially significant domestic markets if propagation, storage, promotion and marketing are properly done.

Protection.

The issues under protection have to do with population pressure, forest fires, deforestation and inadequate participation of stakeholders and policy failures outside the forest sectors. Some mitigation activities are discussed here.

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. To pre-empt the negative impacts of population pressure on forest resources according to the strategic plan, 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. 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 bio-diversity conservation, which are important in many forest areas.

Participation.

The topical nature of **participatory forest management** is simply an aspiration by society to have a greater say in how forest resources are managed and the sharing of the benefits of a managed forest resource. Some people have however misunderstood it in their endeavor to realize their own feeling of importance, to suggest that traditional foresters can no longer manage forests and yet there is no evidence that without the technical know-how it requires to manage forests, there has been any success story of forestry management with expertise from outside the sector. The issues of

participation have to do with formation and formulation of policy and inter-sectoral co-ordination. In Namibia, we have identified the major stakeholders in forestry and their interests or expectations depicted in Table 6 below. The *role of the government* is to *design policies* and relevant *legislation* that promote sustainable management of forests; enhance and *protect the environmental roles of forests* and to stimulate and increase the role of forestry in the country=s socio-economic and cultural development

Table 6 Stakeholders in forestry sector development and their expectations

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

Since the protective roles of forests often require investments, which do not bring obvious and direct benefits to rural communities, the Government has to fill this gap. The same is true of *education and basic and long-term research*, which do not often appeal to private sector funding. It is clear that the state still has a major role to play in forestry.

The responsibility of the *Non-Governmental Organizations* in strengthening *community organizations* and *channeling aid* directly is necessary and gaining currency, provided the NGOs are not perceived or do not conduct themselves in a manner akin to usurping the powers of Central Government. The *role of the private sector in developing markets and processing capacity* will go along way in stimulating income generation from both timber and non-timber forest products.

The *private sector* is important in promoting the *value of tree and other non-timber forest products* through *processing, distribution and marketing*. In Namibia, the potential for oils from nuts and medicines have yet to be realized. The same can be realized in the development of arts and crafts markets, the marketing and promotion of indigenous fruits and even small-scale plantations in East Caprivi.

Rural communities have a direct stake in the indigenous woodlands by way of direct involvement in the *management* of community forest reserves, the rational use and *management of fire*, the adoption and other activities such as the implementation of farm or agro-forestry programmes.

The *International community* as much as they are still keen on carbon sinks, oxygen sources and bio-diversity should support sustainable management of forests by directly funding forestry development projects consistent with these objectives and also press upon their governments to be more responsive and sensitive to trade policies in the developed world which directly and indirectly contribute to deforestation or degradation.

Major programmes of the strategy

The four programme areas of the strategy are: *Public sector capacity building; Community level management of natural forests, Farm forestry* and *State management of environmental forestry* are depicted in the following four tables (**Tables 7-10**) of the forestry strategic plan of 1996.

Table 7 Public Sector Capacity Building Programme
Source: Namibia Forestry Strategic Plan , 1996.

Component	Principal results
Policy revision and preparation of legislation	Government approved forest policy and legislation
Design and implementation of DoF organizational structure	Efficient organizational structure implemented
Development of competent human resource base	Adequate qualified local staff available
Development of sector-wide management information systems	Availability of information for forestry planning and operational management

Revive research division	Availability of an ideas base for implementation forestry programmes
--------------------------	--

Table 8 Community-level management of natural forests

Source: Namibia Forestry Strategic Plan, 1996.

Component	Principal results
Communal forest land zoning	Decentralized forest land use plans
Formulation of forest management agreements	Demarcation of sharing of natural forests management responsibilities
Design of participatory forest incentive scheme	Increased local involvement in forestry activities
Implementation of community-level forest management pilot projects	Lessons for future implementation

Table 9 Farm Forestry Programme

Source: Namibia Forestry Strategic Plan, 1996

Component	Principal results
Design of farm forestry incentive scheme	Expansion of tree stocks on agricultural land
Institutionalization of farm forestry coordination and collaboration mechanisms	Effective tree growing on agricultural land
Development of national tree seed center	Supply of high quality seed for farmers seedling production
Employment of well trained extension field officers	Effective tree growing on agricultural land

Table 10 Environmental Forestry Programme

Source: Namibia Forestry Strategic Plan, 1996.

Component	Principal results
Demarcation of national strategic forests	Watershed, biodiversity and nature conservation forests established
Undertake strategic research	Information on management of strategic forests available
Development of silvicultural management regimes	Proven management techniques established
Determination of local communities participation in environmental forestry	Partnership with local communities

Outcome of the implementation of NFP

Changes in the condition of forest resources

In the context of Namibia the comprehensive implementation of its forestry strategic plan started in earnest in 1997 through a historic partnership with the Government of Finland as a major donor. It is noteworthy that implementation started within 1 year of the approval of the strategic plan. Prior to 1994, there had only been patchy information on the extent and state of Namibia's forest resources. The implementation of the national strategy has concentrated on the building of human capacity, gathering and managing information on forest resources, institutional reform and also bringing into operation, our strategy on community-based management of forests and the definition of nationally important forests outside existing protected areas, which have high conservation value. Linked to community based forest management is fire management in which emphasis has shifted from state-led fire control and suppression, to community-based fire prevention and pre-scribed fire use. Since the implementation programme of the strategy has been in existence for only 3 full years, it is not possible to clearly see what could be termed improvements on the conditions of forest resources. What is described herein are only the indications of what will have a positive influence on the conditions of forest resources.

Community forest reserves

As a forerunner to our strategy of community participation in forest management supported by our current forest bill, a number of community forest reserves have been identified.

In the next 5 years the number of such forests is expected to more than double and the ones listed here in **Table 11**, will be under formal management regimes since management planning for a number of them are underway.

Fire Management

In the Caprivi in the North Eastern part of Namibia the incidence of fires has been reduced significantly and the area that used to burn has been reduced by 40% since 1996 when the project started. As a result the conditions of the Kalahari and Mopane Woodlands are slowly improving in terms of biomass yields.

Conservation areas

From the beginning of implementation of the plan, the Ministry has defined the criteria for identifying and selecting areas outside the current formal protected area network that have unique, ecologically or in a biodiversity sense, worthy of special management or protection. A national map of these areas and brief descriptions of the present status and conservation value has been prepared. Plans are underway for the Minister of Environment and Tourism to present the proposed areas to Cabinet for formal approval and further discussion before a formal declaration in a gazette is accomplished within the provisions of the new forest bill.

Plantations

Though Namibia stands to gain more from managing its natural forests since planting is limited by its aridity, the Directorate of Forestry encourages planting of trees with immediate economic value. It is true that planting has increased but the plantings are so far, negligible, by the standards required of industrial plantations. Over the last 4 years, only a limited area of 300 ha has been planted. However more planting is expected of high value trees such as the fruit and nut marula tree

(*Sclerocarya birrea*) and pole species such as Eucalyptus in response to demand for industrial marula oil and poles, respectively.

In the Caprivi a commercial company plans to develop a 3 000 ha plantation.

Deforestation

As of now it is still too early to relate our NFP activities to rates of deforestation. However, the Directorate of Forestry has probably had more publicity in the last 4 years than it did 25 years before that. Even though we do not have hard data, it appears that deforestation rates are stable at about 0.5% a year, which in the woodlands in northern parts and the acacia-dominated lands in central Namibia, translates to approximately between 80 000 to 100 00 hectares per year. Furthermore the creation of several community forest reserves has sprung from a general acknowledgement that deforestation is a threat. In a way, it is a rational assumption to claim that community forest reserves discourage the encroachment of forestlands.

Table 11. Proposed community forest reserves

Community forest reserve	Area in ha	Remarks
Uukwaludhi / Uukolonkadhi (North West Namibia)	200 000	The reserve has potential for wildlife conservation for tourism purposes, is currently important for supply of fuelwood, poles and a vital dry season grazing area. Sections of it have been set aside to demonstrate community-based management planning, with management by laws.
Okongo Community Forest Reserve (North West)	75 000	This area has timber, dry season grazing and browsing values. It also has a great eco-tourism area as soon as peace can be restored in Southern Angola.
Ohepi	60 000	The woodland provides poles, fuel wood and valuable grazing and browsing
Rehoboth Acacia Park (90 km south of Windhoek)	12 000	Has immense tourism and conservation value, being near the Capital City, and having very specimens of camel thorn (<i>Acacia erioloba</i>) trees on a floodplain
Tsumkwe		Indigenous fruits and nuts valued locally. Timber including substantial dry wood than can support a cottage industry to support the minority San Community
Bukalo (North East)	5,000	Has direct use values such as poles, fuel wood and grazing

Changes in the supply of goods and services

Fire Management

Fire management in the Caprivi Region has produced a number of benefits even if they have not been properly measured and judged to be significant. These are therefore early perceptions on the most plausible effects on fire management.

The *quality and quantity of grazing* have improved, especially in the managed areas with its possible positive effects on livestock health and production.

It has led to the *restocking* of a newly created community based wildlife conservancy by wild *game species* such as zebras, impala, ostriches and lions. These species have high tourism and trophy hunting values; both of which are the main income generating activities for which the conservancy owes its existence.

Valuable *thatch grass*, which is limited to a few species, has markedly increased in quantity in the Caprivi as a result of the reduction in rampant fires. The grass is exported to other regions of Namibia where numerous tourist lodges are constructed. It has really helped community members to value fire management and to guard against unplanned fires.

The current NFP did not create, but supports the current efforts to promote *marula oil*. In fact in the next 5-year development phase the Directorate will conduct trials in the vegetative propagation of marula, under our research and farm forestry programmes.

The *supply of fuel wood* to rapidly growing urban areas is now not currently well organized and often those who gain through wholesale and retail sales have no responsibility for protecting the resource against unsustainable exploitation. With the creation of community forest reserves fuel wood harvesting will be regulated in order to discourage unsustainable practices and enable income to accrue to community members rather than “fly-by-night” dealers.

Timber Supply and control over utilization.

The supply of timber has not improved except in the sense that the capacity to control illegal harvesting has improved. The capacity of the directorate to monitor the export of various wood and non-wood products has markedly improved as a result of a novel central permit system linked to two regional offices. The permit system does not allow the exportation of non value-added wood products except small quantities of fuel wood to South Africa.

Policy and institutional changes

Policy Changes

The national forest policy in use since 1992 was not the result of the National Forest Strategy, which was produced in 1996. It is however important to note that the 1992 policy was criticized for a number of its features even though it filled a huge colonial vacuum during which the forest sector was governed by a series of authoritative statements of experts without a comprehensive written policy which could be used to assess the performance of the government of the day. The policy of 1992 was quite conservation oriented and called for a politically sensitive case of additional land alienation for forestry and laid a lot of emphasis on government action without clear division of responsibility between the state and the local communities around which most forests exist. Despite mentioning community participation, it was unclear about it and sent confusing signals with its call for more forest reserves without adequately thought out strategies. Furthermore, its focus did coincide or conform to the major development objectives expressed in NDP1 and NDP2. In addition, the policy was weak on the more recent global policies and dialogue on forests starting

form the Rio Earth Summit, which took place the same year the policy document was approved. In fact post-Rio global dialogue has presented a number of challenges that are now being taken up by individual countries and regional political and economic groupings. With all the above, it became necessary that the new forestry strategic plan make a recommendation to review the policy and make it more precise and more in tune with national development objectives, rural development and global environmental concerns, in which forests play a major and key role.

In 1998, new policy was drafted discussed and adopted by the Ministry in September of 2000. The policy has a number of features and is considered a major improvement over the one in 1992.

Summary of the revised policy

The aims of the revised policy of 2000 are as follows:

1. To reconcile rural development with the conservation of biological diversity by, empowering farmers and local communities to manage forest resources on a sustainable basis.
2. To increase the yields of benefits of the national woodlands through research and development, application of silvicultural practices, protection and promotion of the requisite economic support projects.
3. Create favourable conditions to attract investment in small and medium industry based on wood and non-wood forest raw materials.
4. To implement innovative land use strategies, including multiple use conservation areas, protected areas, agro-forestry and a variety of other approaches designed to yield global benefits.

Strategy for the immediate implementation of the policy

The sector will employ a multi-sector approach to planning especially at the regional levels and to seek official policy support from land use ministries at the national level.

Annual operations will be guided by mid-term strategic, and annual objectives as described before.

It will develop management plans recognized by stakeholder communities and local political bodies.

Support will be given to Non-Governmental and Community Based Organizations and the private sector involved in forestry.

Pilot projects, which prove to be successful such as the community based fire project in the Caprivi, will be replicated in other areas.

Special attention will be given to income generating projects to alleviate poverty and create employment.

Forest Legislation

Again the forest legislation that is in parliament originated from a process that started about 6 months before the strategic planning process started. It was however delightful that the two

processes overlapped and the strategy made sure that it was in line with the progressive elements in the forest bill. For instance, the community based management of natural forests programme of the strategy is based on the legislation that will allow communities to identify an area of forests over which they have a traditional claim as a community forest reserve and will likewise have the right to receive revenues from any sales of forest produce from the same. This would have been impossible in the old forest act of 1968. In addition new issues such as the conservation of biological diversity are amply covered under the Environmental Forestry Programme of the strategy. The forest bill was adopted by its parent ministry in 1998, after almost two years of discussions and comments from stakeholders. Herein are the essential elements or provisions of the bill.

1. It calls for a forestry council to advise the Minister and Regional Forestry Councils as deemed necessary. The council will bring together the various interests of the land use sectors and traditional authorities in forest management.
2. It gives legal recognition to various classes of forests; state forest reserves, regional forest reserves, nature reserves, community forest reserves and forest management areas. This is a way to broaden the ownership of forest resources to reflect the broad interest in forest matters and the sharing responsibility in their management.
3. It recognizes sustainable forest management and stipulates the use of technically sound management plans for those who own forests and which to derive benefits from them.
4. It requires that the Directorate of Forestry compile a National Forest Inventory and requisite maps to provide data for policy, and management decision-making purposes at the national, regional and local levels.
5. It supports Environmental Protection and as an example, requires that Environmental Impact Assessments be done before the establishment of plantations and other activities that interfere with natural vegetation such as large-scale bush clearing activities.
6. It controls the commercial use of Forest Produce from all forests, in addition to the use of forestlands for non-forestry purposes. In this regard, it permits grazing on selected parts of forest reserves by way of a permit or license.
7. It provides for *Forest* and *Fire* Management Committees at the Regional level. In this regard the Minister can declare areas contiguous with forest areas as fire management areas. In addition, the minister is empowered to declare any land as *a fire hazard area* and can specify regulations to be followed to prevent un-prescribed burning and also to allow safe legitimate burning for purposes of land management. It empowers the Minister to appoint 'honorary forest officers', who could be members of the public and traditional leaders.
8. It has recommended a rigorous procedure to be followed before a classified forest area or land can be converted permanently to non-forest uses.
9. It specifies offences (section 34), the powers of forest officers (section 41, 42) and permits the Minister to confer powers on other government officers such as Wildlife Officers, to inspect premises and arrest suspected transgressors.
10. An ordinary citizen may bring a lawsuit to require the enforcement of the act (section 48).

To enforce the law the Minister will gazette a set of regulations spelling the details of the legislation. The regulations cover tree harvesting, transport, export, fire management and control, wood processing and application forms for all forms of licenses and permits.

In conclusion, the forest bill allows the general public and local institutions to participate in forest management than was the case in the current two pieces of legislation.

Other institutional changes

Since the strategy was adopted its implementation looked at the improvement of the organisational efficiency of the forest administration. This entailed the defining of mid term strategic objectives coming out of the main strategic plan and a clear set of *result areas and indicators*, on the bases of which, performance of the sector would be assessed. Though this exercise is merely in its second full year of implementation it is a worthwhile system in *performance management* in the forest sector.

Linked to the performance is the gradual adoption of criteria and indicators, which is also going to be used to assess the sectors performance and also to highlight the often hidden or unrecognised contribution of the sector to the national economy. This is a crucial point.

Research

The national strategy also recommended the making priority choices in forest research. So far a report on forest research priorities has been produced and a forest research networking strategy is planned for immediate implementation. However research has lagged due to lack of capacity and the time it takes to develop researchers in-house. It can however be appreciated that current and planned research programmes on the propagation and promotion of indigenous fruits fit quite well with the national strategy of poverty reduction and creation of employment.

It is quite clear that a lot still needs to be done in research on dry zone afforestation, fire management, ecology of dry forests, use of lesser known species, to mention a few.

Education

In education, the strategy has led directly to the development of local diploma level training in forestry. The first graduates of the programme will come out in 2001. This will definitely boost the capacity of the forest service, especially with the new policy of decentralisation which requires a massive deployment of skilled personnel who are able to work with much less supervision from the central government as is the case today. It is also delighting to note that students are exposed to the national strategy while still in college and also as newly recruited officers when they go through the induction course.

Through the institutional capacity building programme of the forestry strategy, the government in conjunction with Finland has mounted a large formal forestry education scholarships at the under and postgraduate levels. The results of this training are likely to have a positive impact on the performance of the forest service.

Extension

The community based management of forests programme has an intrinsic extension component since we have to deal directly with rural farmers. A perfect example of this is the integrated fire management project in the Caprivi Region in North-eastern Namibia, which has proved quite successful in raising public awareness on the dangers of unplanned fires and has actually reduced the incidence of fires in the region.

It is however still a fact that Namibia is far from building enough experience and a set of strategies for forestry extension in the short time since independence and also since the implementation of the national strategy began in 1997.

Decentralisation

The current process of decentralisation does not owe itself to the forest strategy. It stemmed from the overall policy of the government to devolve more power to the regional and local governments. In this, the forest service has already drawn up a strategy in readiness for the process. This will be helped greatly by the fact that the forest service, though centrally planned and controlled, has a network of offices in each of the 13 political regions of the country, each under a District Forest Officer. These political regions are clustered together and supervised by senior forest officers, designated as Chief Foresters. On the event of full decentralisation, the central forestry office will give up all the offices under district forest officers but will retain the offices of Chief Foresters to aid in supervising planning and implementation of forestry programmes in political regions. In addition it will retain all the research stations. Policy, legislation and sourcing of funds for development programmes will also remain under central control.

Policy and institutional responses in other sectors

Education

Since forestry training is undertaken under the auspices of the Ministry of Agriculture, the forest sector is slowly, getting recognized by the ministry of agriculture. Historically it is under this same ministry that forestry was relegated to a tiny division that was totally ineffective to meet the needs of the communal areas in which most forest resources are to be found. It is also from agricultural activities that the majority of the loss of total forest cover is often attributed. It is therefore an important issue to the sector that forestry training which has been ratcheted up within the forest strategy is getting recognized in the agricultural sector and that students of agriculture are exposed to forestry teaching.

There is also a slow but pleasing recognition of “*veld foods*” by the agricultural sector. This is partly due to the fact that wild foods in the form of nuts and fruits contribute to “*food security*”, a development theme in which the Ministry of Agriculture is a major player. To this extent agriculture is now co-ordinating an indigenous fruits project in which forestry is expected to play a role in propagation and improvement work.

Because the ministry of lands was represented in our strategic planning process, forestry as a form of lands use is now recognized in the lands sector and it is most likely that the forest sector will be represented in the regional land boards to be constituted upon the adoption of the new communal land bill.

Industrial and energy policy changes

Namibia through its ministry of energy drew up a new energy policy, which among other things plans to exploit available deposits of *natural gas* in Southern Namibia and *wind energy* from the windy coastline and *solar power* from its abundant solar radiation. In addition it has created a body to co-ordinate the sustainable use of biomass energy in which the forest sector is represented. Wind energy and the proposed hydroelectric plants in the north will feed more power into the national grid and with it make it more abundant and cheaper than imported power in the long run.

In effect, the exploitation and promotion of gas and electric energy is likely to have positive implications to forest management since more affluent people are likely to shift to gas and electricity. This is what is likely to happen especially in the northern urban areas where wood fuels are used by a majority of Namibians.

Environment

Notably the draft environmental management bill recognizes sustainable use of natural resources but has also specifically put restrictions on forestry development, especially industrial plantation development without the authority of an environmental impact assessment. This is out of the global fear among environmentalists, of the negative ecological effects that large plantations may have.

Impact on economic and social development changes

In this regard it is sufficient to state that the strategic plan was shaped by national development objectives. In implementing the strategy for forestry, it has become clear that the survival of the sector will depend on its response to public opinion and its need for employment, income generation, redistribution of wealth and greater governance by local communities of their natural resources.

Impacts of policy and institutional changes in other sectors

The forest sector has responded to *global forestry policies* by considering conservation of biological diversity, climate change, desertification within the framework of sustainable forest management. The national strategy has made it easy to adopt these global policies and conventions into operational planning.

Nationally the forestry strategy was developed within the *framework of national development objectives* as was contained in Namibia's first national development paper, the National Development Plan Number One (NDP1) and has responded positively to issues of socio-political and economic change such as:

- Devolution of powers to local communities to manage natural resources
- Poverty reduction strategies in order to legitimise forestry activities within a rural and farming context
- Income generation through value added programmes in areas such as the arts and crafts industries
- Decentralisation as a tool in empowering local governing structures and the democratisation of decision making

The major policy change by the Ministry of Lands, Resettlement and Rehabilitation to recognize *group or communal tenure* over land and its resources is not only consistent with, but also beneficial to our programme on community based forest management and is already having a big impact on community based wildlife conservancies.

It is also imminent that *a new national policy on wildfires* will be formulated based on efforts in the integrated fire management project being implemented today. This could also be considered a response by the NFP to needs in the management and protection of natural resources.

Policy tools created based on the Forestry Strategy

It is rather too early to describe new policy tools that have been based on Namibia's forestry strategy. However a few tools have emerged but are very much in their early stages:

In the community based management of forests, the provision in the new forest bill on "*honorary foresters*" is being tested as a way of getting local commitment to forest protection and management.

The already established *forest products permit system* which is a component of the planned *Management Information System* is going to be a major input in monitoring trends in the forest sector, which in turn will be used to make decisions on the sector.

Acceptance of forestry as an important sector in the economy

Perception of forestry by policy makers

On the positive side, it is evident that since 1995 with the review of the forest legislation and 1996 during the cross-sector consultative meetings in aid of strategic planning, the forest sector in this country has continued to enjoy unprecedented publicity in the electronic and print media. Political and media concerns on deforestation in some areas in Northern Namibia have brought the forest sector into sharp focus among policy makers and especially leading politicians. However the public expectations from the sector is often *biased towards tree planting* and the development of *industrial plantations*. While this is valid, it does tend to remove the responsibility of public to value and participate in the protection and management of indigenous forests and woodlands that are best suited to survive under Namibia's arid conditions. In fact, Namibia's aridity is why it does not have enormous afforestation projects that the political leadership would like to see. The forest service is therefore under pressure to plant trees to get political legitimacy and at the same time protect the woodlands, which have significant ecological and direct economic value to Namibia.

The policy makers of this country have however recognized the importance of the forest sector, the recent pleasing trend of capacity building in the technical and professional cadres implemented under the national forestry strategy. The recent devastating wildfires in the commercial farming regions of Namibia have also highlighted the national role that the forest service can play in the livestock industry through the protection of pastures from fires and the promotion of prescribed burning.

Changes in the perception of other sectors towards forestry

This is probably where the forest sector has the greatest hurdle it needs to overcome in order to achieve meaningful cross-sector collaboration in the achievement of forestry's objectives. Even though it is true that the strategic planning process raised awareness of other sectors since a number were represented, this has not translated in any significant way to real policy changes from other sectors. There are only a few examples of changes that can be mentioned herein.

The National Planning Commission by virtue of having participated in our planning process has given a lot of recognition to the forest sector and is sensitive to its plight. In general this commission has a healthy attitude towards the forest sector and has tended to support requests for Government Funding for both recurrent and development work.

The Ministry of Agriculture has recently responded positively by recognizing indigenous fruit tree production as a legitimate food security source. They still have to respond to major issues such as

fire management as a range or pasture management issue. The sector also tends to have no qualms about converting large areas of forestland to agricultural use, even when such conversion is not done in ways that area environmentally sound.

The Ministry of Lands has made a rather remarkable policy change in that it recognizes the forest sector as an important member in their proposed local bodies to be known as Land Use and Environmental Boards, which will have the power to plan and adjudicate land.

Support for forestry activities

The national strategy has encouraged the participation of community groups in forest management in the same way that wildlife conservancies have done so by conferring rights to forest resources. However, because the densities of commercial timber species is low the levels of new and direct economic benefits is much lower than that for wildlife conservancies. This is because the use values of forest resources may be high but taken for granted by community members and policy makers alike. However the creation of community forest reserves and fire control activities arising out of the forestry strategy has increased the level of participation of communities.

A few non-governmental organisations are more actively involved in non-wood products marketing and are partly supported by our strategy. However, it is difficult to claim their origins from the national forestry strategy.

What is abundantly clear from our national strategy is that it has formed a systematic basis for *increased donor funding* and it is on the basis of it that the forest sector has mounted unprecedented levels of institution building and human capacity building.

Evidently there is more work that needs to be done to encourage this more deliberately.

It is quite likely that our idea to support income generation in the next National Development Plan (NDP2) from 2001 to 2005 will greater participation of the private sector, non-governmental organisations and women's and other resource user groups. In particular, plans to support the arts and crafts industry will target wood carvers and weavers groups.

Investment in the forestry sector

By way of introduction investment in the forest sector in Namibia is limited by a number of factors

The absence of industrial plantations has not supported an internal processing industry. It is however possible that Namibia can produce its own treated poles for its large demand for fencing livestock and game ranches. Most of these can be grown in the form of woodlots and small plantations by the private sector and government.

The traditional concentration on only one major timber species has meant that large stocks of *Pterocarpus angolensis* were exploited over the last century and the current quantities are low in density and often expensive to log and transport to the mills. In addition, government in the past erected huge capacity mills, which could not be sustained by a single species.

The lack of technology to utilize lesser others and the huge amounts of biomass carried by encroaching bush is yet another problem. Namibia has the potential to produce high quality flooring material from alternative species such as *Burkea africana*, and *Biakieae plurijuga* but has yet to exploit this as is happening in neighbouring countries.

The *weakly developed markets* for non-wood forest products have also been a major factor when in actual fact there is good potential in products such as oil from marula kernels and mangeti nuts and others. It is delightful that something is happening in this regard.

Namibia has so far failed to use its relatively *healthy balance-of-payments situation* to be an importer of raw materials for manufacture and re-export when it is in a position to do so. South Africa has been particularly successful in doing this and yet Namibia is much closer to producers of high value hardwoods than South Africa.

The current levels of investments in the forest sector are first and foremost, dominated by the public sector and for a good reason. The government felt that it was its responsibility to restore or rehabilitate an environment that had been marred by deforestation, and was naturally arid as to require amelioration to make it more habitable. It can therefore be claimed that the revival of the forest sector by the creation of a full directorate of forestry was motivated more by environmental and amenity concerns rather than the direct economic benefits of wood products sold directly in the market. It has also followed that criticism of the sector's performance has been related to what appears to be the lack of massive tree planting and greening of the environment in general. Hence the public sector has had to invest in infrastructure such as offices, training and forest development projects generally qualifying as community based.

The level of public investments from both within and outside the state revenue fund is tabulated herein.

Table. 12. Donor funding of the forestry sector

Project	Country	1993	1994	1995	1996	1997	1998	1999	2000
National Remote Sensing Centre	Denmark	750,000	750,000	750,000	750,000				
Vegetation Mapping	Sweden	1,180,250	1,180,250	1,180,250	1,180,250				
Institutional Strengthening	Finland	683,333	683,333	683,333	683,333				
Forest Inventory	Finland			1,650,000	1,650,000				
Forest Fire Control					900,000				
National Tree Seed Centre	Canada		400,000	400,000	400,000	400,000	400,000	400,000	400,000
Forest Research and Development	United Kingdom		877,500	877,500	877,500	877,500			
Kavango Forestry Support	Luxemburg		423,000	423,000	423,000	423,000			
Support to Forestry Sector	Australia			500,000	500,000	500,000			
North Central Community Forestry	Denmark					2,255,000	2,255,000	2,255,000	
Volunteer Services to Forestry	German			1,260,000	1,260,000	1,260,000	1,260,000		
Namibia-Finland Forestry Programme	Finland					12,000,000	12,000,000	12,000,000	12,000,000
Community Forestry in North East Namibia								1,340,000	1,030,000

It is evident that more private investment in the forest sector occurred prior to the development of Namibia Forestry Strategic Plan in 1996. This was mainly in the form of sawmills in West Tsumkwe and another one, which operated a government owned sawmill in Rundu, Kavango Region. Both of these firms had furniture-making concerns in Windhoek. However due to mismanagement and competition from South Africa these firms have since then folded.

Since then, more private investment has been made in the charcoal manufacturing industry. This again has been frustrated by management and product certification requirements in European markets.

The only notable investment in recent years has been the wood-manufacturing factory in the Caprivi Region at a cost of US 2 millions. A veneer mill based on imported is planned at the coastal export processing zone and the initial investment cost will not be less than US \$ 5.0 millions, with annual operational costs being about one half of that.

With special attention to the private sector, the forestry strategy has not made a significant change. The levels of investments are shown in chapter 3 of this report.

It is evident that more could be done in the forest sector by way of private sector involvement. In our forestry outlook paper we have envisaged the following.

- Reconstituted wood products are a definite investment area using encroaching bush and new or improved technology. During NDP2 the forest sector will prepare a series of policy position papers it wishes to share with the private sector and relevant government ministries. It has a good potential for growth and employment creation.
- If the number of species that can be commercially utilized increases investment opportunities will be created. In this regard trees species such as *Burkea africana*, which are currently not commercially exploited, can be used to produce high quality wood for “parquet flooring”. Namibia has substantial quantities of the species to make it a viable small-scale industrial targeting the local market.
- The charcoal industry has the potential to double its output and could gain from recent technologies in making briquettes and the manufacture of industrial carbon, provided that certification does not become a trade barrier. Already the forest service is supporting charcoal exporters and manufacturers to respond to certification requests.
- Namibia’s proximity to less industrialized but forest-rich neighbours such as Angola and the Democratic Republic of Congo makes it possible for Namibia to create value-added wood-based industries, such as the planned veneer plant at Walvis Bay.
- Investment in cottage industries such as processing of oil from tree nuts and the improvement of art and crafts can be viable economic activities that will be pursued.

The facts so far, indicate that not much has been done and achieved in terms of private sector investment under the current strategy or national forest programme. However it is expected that this will pick up as the implementation of the national programme goes into the second national development period (NDP2, 2001 – 2005).

Capacity development in the forestry sector

Before the implementation of the forestry strategy Namibia had only 3 people qualified at the professional levels and even then none had a forestry qualification. The Namibians were either specialized in botany or wood science. These were assisted by 5 nationals who had been trained at the technical level in segregated schools in South Africa. In addition, they had never been exposed to planning and supervisory duties. In 1992 and 1993, 3 people were sponsored to go for further studies at the degree or undergraduate level.

Just before and after the development of a national strategy or programme, several positive things have happened as far as institutional capacity is concerned.

1. The Directorate of Forestry has run an exemplary staff-training scheme in government, which has stressed the need to select people on merit to proceed for further studies, in order to build a professionally and technically competent work force. In this regard several staff members have been sent abroad for further training.
2. In the recent past an induction programme has been introduced to prepare newly trained staff to be acquainted with the missions, visions and values of the forest service. In addition to this, they are exposed to the elements of the strategic plan, mid-term strategic objectives and the philosophy of result oriented operational planning and monitoring concepts.
3. Planning is being done systematically and clear result areas and indicators are defined from the office of the director to the district forest officer, so that each level can see how they contribute to the achievement of defined strategic objectives. A management reporting system as part of a newly development management information system (MIS) helps in monitoring the achievement of annual objectives on a quarterly basis.
4. There is an annual planning session for all staff to review annual objectives and operational plans.
5. There has been a rapid development of regional offices, which have been equipped with communication facilities to improve the outputs or productivity of the offices.

The levels of Namibians that have been trained as a result of the new strategy are as presented in Table 14.

Table 13. Training of forestry staff since 1994

Level of Training	Number	Status	Other Remarks
Diploma (technician training)	8	Completed	1 drop out
	10	In training	
Undergraduate (BSc degree training)	4	Completed	
Undergraduate	7	In training	
Postgraduate Training (MSc)	6	Completed	
MSc	1	In training	

Table14. Training levels of current staff 4 year after developing the forestry strategy

Level of Training	Number Today	Other Remarks	Number in 1994
PhD	1	Director	2; 1 Director 1 Deputy Director (Deceased)
MSc	9	3 in research 1 in inventory 4 in remote sensing 1 in administration	2
BSc	8	1 in administration 5 field officers 2 in remote sensing	2
Diploma	14	Field officers	6
Ranger certificate	18	Field officers	4

Research capacity

As said earlier, Namibia's research capacity is still limited and the 3 newly trained MSc holders require mentoring and more experience in proposal writing, execution and scientific reporting, not to mention a deeper grasp of researchable issues. A proposal has been prepared to do exactly that and it is hoped that the research institution can twin with a more advanced institution to realize its objectives.

Capacity of other stakeholders

Today Namibia has some capacity among non governmental organisations to run community forestry programmes by virtue of the current and topical interest in the decentralisation of power to local institutions to enable them to manage their natural resources.

The implementation of our community-based management of forest resources has greatly spurred interest and we are slowly but surely building experience in diverse cultures in northern Namibia in forest management. The community-based fire management programme is another example where not only the capacity of the directorate of forestry, but that of participating communities have been improved and we are now moving into the practice of pre-scribed burning. These initiatives have their origins from the national strategy.

Our support to charcoal exporters in the certification process has also improved their appreciation that encroaching bushes can be managed as a crop using sustained yield concepts and through this, we have forged a useful partnership with a rather conservative lot of farmers.

The whole strategy was planned with cross-sector participation and in pursuing our objectives through field programmes we are consciously applying the concept of cross-sector collaboration. This is however made difficult by the fact that most forest products used by people are not commercially traded. Hence, the economic imperative for sufficient cross-sector participation in forestry development is often low right from planning to implementation. It is however apparent that as the service becomes larger, more publicly known and staffed with well qualified Namibians, the recognition of the service will give it a more persuasive case to warrant more practical attention of current and potential collaborators.

Efficacy of the NFP process in encouraging inter-sectoral discussion and integrated planning

Even though there is more to be done with regard to integrated planning a few examples have come out the present national forestry programme.

Through our environmental forestry programme in which we have proposed several areas of conservation interest and which also have the potential to be added to the national protected area network, we have involved the National Biodiversity Task Force and private consultants in the process. Because of that forestry is now a recognized player in this regard.

Forestry's role as a player in environmental monitoring using remote sensing technology has made it a key member of the desertification control body at the national level. It is notable that this has stemmed out of our capacity building work, which has staffed the National Remote Sensing Centre with qualified Namibian Staff.

It is also imminent that soon forestry will be a leading player in National Fire Policy discussions. This also has the potential to lead to a new national wildfire code such as the one in South Africa to give coverage to fires in forestry and livestock areas and fire in general.

Adaptability of the NFP to changing situation

Factors that have necessitated the modification or adaptation of nfp

Since the implementation of the national forestry strategy or programme is merely in its fourth year, it has not even been fully implemented. To date we have to realize our major objectives such as capacity building, streamlining organizational and administrative procedures, establishing a network of strategic forests, establishing a network of community forest reserves and enhancing community and private sector participation and adopting a system of national criteria and indicators for SFM in the Namibian Context. It is likely that progress in these programmes, will be made within the next 5 to 8 years, especially by the end of NDP2. Because of these reasons, it has not been necessary to consider making changes or modifying the strategy. It is however pertinent that the forest service have the capacity to make changes and regularly update the national forestry programme or strategy as discussed in the next subsection. To date, there are only a few issues to which the national forest programme or strategy has responded. These are, the *policy of decentralization*, and renewed calls for *poverty reduction strategies* by all sectors of government during NDP2. Forestry has responded to these without any problems since they are in any case consistent with the philosophies behind our community based forest management and farm forestry programmes.

Capacity to regularly update NFP in response to changes

As was stated before the forest service has adopted a system of planning by way of mid-term strategic objectives, in which clearly defined result areas and indicators are used as guidelines to performance. In this system, officers on an annual basis review the achievements and failures of the previous year's plans. In doing so, themes or activities requiring new or further emphasis are brought up and in some cases adopted in the next year's plan of action, meaning that annual objectives are modified to reflect changes.

It is expected that the capacity to update the NFP will be markedly improved when the *MIS is fully operational* and also with the setting up of a fulltime *management planning unit* which will advise

management on issues that we must consider in drawing up management plans of community forest reserves. As the capacity of management improves in policy analysis and strategic thinking a policy review committee will be formed within the Directorate of Forestry to give inputs through a National Forestry Council which is provided for in the new Forest Bill to effect changes at the national level.

With respect to the above two issues, it is necessary that a full review of the strategy is done at least ten years after its implementation to really take stock of achievements and relevance of the current national programme or strategy. This could roughly coincide with the end of NDP2 would come soon after a national testing of the Criteria and Indicator on the whole of the forest sector.

Economic viability of national forest programmes

Current levels of production of goods and services

Description of goods and services

To describe the goods and services coming from Namibia's forest sector, it should be borne in mind that Namibia's often vast forests or woodlands are not gazetted and exist in the so-called communal areas characterized by open access rights even though communities within a given locality can claim ancestral rights over a given region. So far only 160 000 hectares of the *Pterocarpus - Baikiaea* forests in the Caprivi is in a state forest reserve. In this regard, traditional authorities have had a big role in land allocation and adjudication and often had set rules on the use of forest products and for other important uses such as grazing and even conversion of forests to cultivation fields. In the virtual absence of designated and legally protected forest reserves, the consumption of forest goods and services does not translate into government revenue except commercial timber concessions on a few tree species over which the government has the right to collect royalty regardless of where they occur in the communal areas. What it means is that know the goods and services that come out of Namibia's forest resources, the directorate had to make an assessment to find out the type of goods and services and put some economic value on the ones that are used by the public.

Construction poles. This is one of the most important uses since the provision of shelter is a cardinal requirement for human survival. Since construction poles are largely extracted from forests and often not traded in the open market, their economic value however huge, are commonly overlooked.

Crop protection fences. This is another traditional use of small stems and mostly thorny branches to fence crops in northern Namibia. The rains are often unreliable and when they come they may not last longer than 50 days. Once crops germinate and start growing and given that this is a dry area with lots of free ranging livestock, cropping without protection against herbivores is a huge risk. A fence is therefore crucial and has a direct contribution to crop protection and should therefore be assigned its rightful economic value.

In another form **homestead fencing** is culturally valued by people in north-west and north-central Namibia and can consume significant amounts of poles measuring 20-30 cm in diameter which under the dry conditions are fairly large stems.

Firewood. Firewood is the most predominantly used energy source in most households. Namibia has a growing charcoal manufacturing industry but it is mainly for the export markets in South Africa and Europe.

Commercial logging.

This has been going on for many years starting from the early 20th century when tamboti (*Spirostachys africana*) poles were harvested in the Tsumeb area in the north-central Namibia to supply the rich copper mines. Soon after, timber concessions for the harvesting of kaaat (blood wood) *Pterocarpus angolensis* were awarded to supply local and South African joinery factories.

Wood for art and crafts.

The art and crafts industry is an important “cottage industry” which luckily relies on Namibia’s rapidly growing tourism industry. Its importance is easily understood but not often credited to the forest sector. Wood curving is still seen as a cultural rather than a viable commercial enterprise. The wood is often supplied from forest areas and since this is a commercial activity, which uses the main commercial timber species as well, the artists have to obtain harvesting licenses from the Directorate of Forestry for which royalties are charged.

Mopane roots. The species *Colophospermum mopane*, produces a shrubby form under rocky ‘calcrete’ soils and the superficial roots and often stunted stem growing over the rocky grounds often produce deformed but attractive pieces which are harvested, the remaining bark sand-blasted, making decorative pieces put in fish tanks and other arrangements. These are harvested and exported to Europe and Asia.

Services

Wooded ecosystems. The most important service is in the form of habitat provided for Namibia’s wildlife, which is the basis of Namibia’s tourism industry. In this regard, the mopane woodlands of Etosha Park, the riverine or gallery forests along the ephemeral rivers flowing to the coast through the Namib Desert are good examples. It is important that even if the forest service is not directly responsible for protecting the forests in wildlife parks, those trees are also protected by the forest act and their value ought to be recognized in putting value to our wildlife resources. This is often overlooked.

Goat forage, mopane worms, food (nuts and fruits). Goat forage is important in the livestock industry and the continuing protection of huge woodlands is contributing a lot to the healthy livestock industry. **Mopane worm** is a traditional and now becoming a gourmet delicacy in up market restaurants. Furthermore, in some parts of Namibia such as the Northwest where the San people live they still depend on gathering **nuts** from tree species such as *Guibourtia coloespermum* (false mopane), *Schinzophyton rautanenni* (mangeti) and several other **fruits** from species such as *Strychnos*. These form a formidable part of their subsistence and food security. In the more agricultural parts of Northern Namibia the cultivator-pastoralist cultures also harvest fruits and nut producing species such as *Sclerocarya birrea* (marula), fruits such as *Berchemia discolor* and species of *Strychnos*. *Sclerocarya* and *Berchemia* have a good potential for greater commercialization.

It is important that services such as **carbon fixation, environmental amelioration and soil conservation** have not been included.

Valuation of the products and services from the forests and woodlands of Namibia

In 1996 during the strategic planning process, an attempt was made to put value on what were considered to be the main goods and services from the forests and woodlands that have been described here. It was not possible to put quantities on all the goods and services produced from the

forests and woodlands of Namibia. However indirect substitution values were put on certain products and services. These values have already been presented in Table 5 in Chapter 1 of this report. The total value of the forest resources was estimated at Nam\$ 1058.2 millions per year. It should be noted that based on a survey in 1997 and 1998 the value of charcoal produced per year was estimated to be worth Nam\$ 124 millions; a figure less than what was estimated in 1996, without a detailed field study. The author believes that the lower figure is closer to the actual value than the 1996 figure of Nam\$ 150 millions. Using the 1996 figures and recent estimates on timber, fuel wood and charcoal production the quantities of goods and their respective values are as follows:

Table 15. Estimated values of goods and services from the forest sector

Forest Goods	Quantity per Year	Monetary Value (N\$,000,000)
Construction poles	not estimated	383
Fences for crops	not estimated	175
Firewood	700,000.00 tons	104
Charcoal	*14,000.00 tons	20
Timber	5,000.00 m ³	10
Homestead fencing	not estimated	2.4
Mopane roots	1000.00 tons	1.5
Arts and crafts	1000m ³	34
Medicines		31
Food (nuts and fruits)		6.3
Mopane worms		1
Services		
Ecosystem (habitat) - For Tourism		218
Goat Forage		9.5

* 15,000 tons of charcoal consumes about 75,000 tons of wood

Resource requirements to manage forests in a sustainable manner

During the last 5 years, the forest service has undergone a period of rapid development of infrastructure in the form of office construction and recruitment of staff to manage newly created offices. A number of donors have also assisted the government in several activities such as scholarships, policy review, forest resource mapping, forest inventory, and pilot activities such as fire management, community forestry and nursery management training. Since very few forest areas, except for fire and commercial harvesting controls, are under formal management regimes, it will not be easy to estimate just what the resource requirements are to manage the forests sustainably. The point is that the current levels of human and financial resources are inadequate if we have to properly manage the forest resources of Namibia. The resource requirements for the major forest areas of northern Namibia include:

- Professional and technical personnel
- Unskilled personnel
- Support staff
- Fixed assets - offices
- Operating and development funds

- Data and information
- Equipment
- Transport and communications
- Land

To manage the forest sector today the following professional and technical cadres of staff are required:

- The top management consisting of the director, deputy directors and chief foresters needs a total of *10 well-trained and experienced professionals* who should hold the minimum of a bachelor's degree.
- The management of field operations needs *14 professional foresters*
- The research division including the national remote sensing center and inventory and planning unit requires *17 professionals* with an *MSc degree* as a minimum qualification.
- The technical cadres of technicians and rangers require a minimum of *24 technicians* (national diploma certificates) and *32 rangers* (vocational certificates).
- The current levels of *support staff* and *unskilled labour*, are sufficient for the sector to perform if it gets the full complement of its technical and professional staff.

In addition to these are collaborating institutions, which are important for the success of sector programmes.

1. The forest service also needs the support and personnel of various organizations in Namibia
2. The National Botanical Research Institute has a comprehensive herbarium a number of scientists specialized in biosystematics, ecology and elements of conservation.
3. The University of Namibia, which does not run a forestry programme would however, be useful collaborators in research through their faculties of science, agriculture and natural resources
4. The Desert Research Foundation also has useful information on desertification and runs a programme on bush encroachment, which the forest sector is interested in.
5. Starting from our own ministry, the ministries of agriculture, regional & local government, lands and resettlement are also important collaborators in the field.
6. In our extension effort, the ministries of education and information are crucial.

Current levels of inputs in financial terms by various agencies

The inputs required to manage the forest sector are in the form of funds to cover operating and development costs. The recurrent budget takes care of personnel costs and covers expenditure of a routine nature incurred in administration, fieldwork to gather data and information, maintaining data bases, conducting farm inspections before issuing harvesting permits, creating and maintaining firebreaks, purchasing vehicles and so on. The development budget on the other hand is used to construct infrastructure such as buildings, develop new technologies, to support special projects with

a potential to provide goods or services. In addition to the government's budget, the sector receives donor support, which tends to operate as development projects with the hope that new developments will become routine activities taken up under the governments recurrent expenditure. The bulk of their expenditure goes to technical personnel and their associated provisions such as vehicles and field costs to cover project activities. Recently, there has been limited activity in the private sector in forestry. The main private sector operations include a wood-manufacturing factory in the Caprivi Region, and the informal arts and crafts trade, which is growing but not well monitored to provide reliable data.

The current levels of inputs in financial terms is presented here in a simplified format and it reflects the current levels of recurrent and development expenditure from the government and its donor partners.

Table16. Inputs by government, donors and the private sector in forestry over the last 5 years

Institution	Main Activities	Annual Budget (N\$, 000)				
		1996	1997	1998	1999	2000
Government	Policy, legislation Forest management Forest protection Forest Extension Development	10,694	11,298	13,540	13,786	15,799
Donors	Support to Government In development programmes and projects	8,624	17,715	14,655	15,685	14,770
Total		19,318	29,013	28,195	29,471	30,569

Current levels of outputs (in financial terms) and services generated

The current outputs in the form of goods and services from the forest sector are reflected in Table15. However, these estimates will further be validated when the sector fully adopts and assesses the 5 *criteria* and *their associated indicators* for sustainable forest management in the Namibian dry zone forestry context.

A distinction that ought to be made is that today, the only output which the forest service is directly responsible for is commercial timber. Even then, the annual sales is insignificant compared to the economic value from construction poles and fuel wood. In the Namibian context the outputs from the sector is not the amount of wood productions from industrial plantations or huge commercially exploited natural forests. Instead the value of the sector is seen from the direct use values derived from the forests by Namibia's majority, the indirect values in the form of ecosystems, the use of wood to protect agricultural fields and so on. If we consider these values in total and weight them against the amount of resources the public forestry sector consumes, then we can say that the administration and management of Namibia's forest resources is paid for the benefits from the sector.

Extent of cross sector transfers and subsidization

Viewed from the local supply of commercial timber alone and given the fact that the consumption of industrial wood and wood products, including paper and products was worth a hefty figure of N\$500 millions in 1999, one can deduce that the import bill for the wood and its associated products, is

financed by direct earnings from other sectors. In this sense, one could argue that the forest administration is subsidized.

However, the financing of the import bill of wood and wood products is matched by the current estimated value of Namibia's forest resources, even though the goods and services are not traded in the formal market (Table 15). The forest administration only directly controls or protects the forests from which goods such as poles, firewood, crafts, timber and fencing materials are extracted. The estimated value of all these is approximately equal to the total import bill for wood and wood products in 1999.

The above argument however needs a regular system of accounting for the economic contribution of the forest sector as was attempted on table 15.

Sustainability of NFP at current levels of inputs and outputs

Given the political support that the forest sector enjoys in Namibia, and given the elevation of the sector's administration to a directorate in 1990, the sustainability of the current national programme has a sound policy backing. The allocation of resources to manage the sector has therefore a strong policy backing but tempered by economic conditions of the country. Since the sector is in the process of strengthening its direct role in Namibia's economy and since the accounting for the sector's contribution is becoming clearer and clearer, the current levels of resource inputs to the sector are sustainable. This has been explained the forestry outlook paper for Namibia up to the year 2020, which envisages a greater economic role of the sector, especially in reconstituted wood products, improved arts and crafts, industrial oils from indigenous fruits and an expanded and sustainable charcoal and industrial carbon industry.

Level of input output ratios that will enable implementation of Namibia's forestry programmes

Even though the contribution of the forest sector is based on goods and services not traded in the market and even if they are, no regular attempts are made to record them, it is still possible but not useful to calculate input output ratios. It is however safe to state that with the current level of inputs into running the forest sector by government, private sector, non-governmental organizations and community groups, the value and benefits of the forest sector to society far outweighs the resource inputs to manage it. The value of firewood estimated at about N\$ 124 millions is enormous compared to the N\$ 30-40 millions used to manage the sector annually.

Notable successes on account of NFP

Today the Directorate of Forestry is in its fourth year in the implementation of its national programme and the top management of the directorate is aware that the realization of our objectives is underway and will only be achieved through forward planning. The national forestry strategy was motivated by the need to elevate the profile of the sector, the necessity to source funds from Namibia and abroad by presenting a comprehensive nationally adopted programme and to give young professionals in the service some strategic direction. So far, all these are being realized to various degrees.

All management staff have been made aware of and a number were involved in the review of the sectors mission, the drawing up of values and the major mid-term strategic objectives on which we base our annual operational plans. This is in itself a major achievement in building the discipline of

strategic thinking. This was again motivated by the desire to get more political legitimacy and to get the service to cultivate a new culture in a government service department; to achieve results rather than to merely draw a salary. The sustainability of these will depend entirely on the ability of management cadres of the Directorate of Forestry to maintain the system and fully internalize it as a management culture for the directorate.

Since we are now operating on result areas and indicators for the sector, our officers are slowly adopting the achievement of results as a measure of their performance and not a series of uncoordinated activities as indicative of their utility in the forest service.

To put the sector's performance in the national sustainable development context we have on account of the NFP, adopted a global policy in the name of Criteria and Indicators of sustainable forest management. This is not only good for the sector and the nation, but also our contribution to the regional and global good. This was encouraged in SADC forestry meetings and also at international forums such as the meetings of the Intergovernmental Panel on Forests (IPF) and the Intergovernmental Forum on Forests (IFF) and the realization by the management of the forest service in Namibia that the sector would gain by a more accurate and thorough assessment of the sector using the *C* and *I* process than without it. This is because the forest sector in Namibia has suffered historically by governments that have under-estimated its contributions to National Development. International or global policies are therefore a good opportunity for national services that can use them creatively for the benefit of their national services.

Through the NFP Namibia has put together an impressive capacity building programme that will produce quality staff for the forest sector, which is expected to keep the profession in the national limelight and keep it out of the oblivion it was subjected to, for over 70 years before independence. The reason behind this was that soon after independence the sector has been managed largely by expatriate staff and yet the political powers of the country wanted the forest sector to play a major role in development and help green and ameliorate its harsh climate. The political expectations and the presence of expatriate staff provided a good motivation for the government and donors to allocate funds for formal education in forestry. Within the next four years, all available middle-level management positions will, be occupied by Namibians and it is likely that the same will be true of the top positions in management. It is likely that the availability of qualified staff will create a competency-based work culture in the directorate.

The NFP process did much to elevate the profile of the forest sector and brought together other institutions, which now understand the sector better. This was the result of the cross-sector strategic planning task force, the series of national level workshops opened at the ministerial level, the support given by the National Planning Commission and in getting the President of the Country to write the preface of the National Forestry Strategic Plan.

With the current structure in place to implement the forestry programmes, with a new and progressive forest bill soon to be in place by 2001 and qualified and ambitious Namibians, it is likely that promoting the sector by implementing programmes is what will buy legitimacy of the otherwise past neglected and underrated sector.

As a result of the NFP the forest sector has been running a national forest inventory, to the extent that, we now can boast an information base for the sector. Furthermore, the inventory team is likely to form the nucleus of a new Management Planning Unit and the inventory results have also spurred the development a Management Information System with six components namely, Fire monitoring, forest resource monitoring, management reporting, forest permits, resource inventory systems. The

second-phase of the Namibia-Finland Forestry Programme will further develop and consolidate the MIS and Management Planning Unit. The sustainability of these achievements is dependent upon the practicality, simplicity and costs of such new developments since it facilitates their absorption into forestry routine or operational programmes. The Inventory data is already being used by the forest service and Namibians can now plan and conduct reconnaissance and management planning inventories. In addition, the Directorate has recruited an officer with mathematics background and is being trained in data analysis and interpretation.

So far the permit system has been adopted by the forest service and is run by Namibian Staff and it is based on a locally developed software programmes and be used by officers without much computer training. The National Remote Sensing Centre has been trained in fire scar mapping from NOAA satellite images. The other systems will soon be launched. These suggest that programmes can be absorbed and have the potential to become absorbed and sustained with minimum external inputs; hence ensuring sustainability.

Another achievement is the centre role that the forest sector is playing in both the National Biodiversity and Desertification Task Forces. This took time to develop but its being realized by virtue of our slow but systematic implementation of our environmental forestry programme and also because of us maintaining the most sophisticated remote sensing centre laboratory in the country. It has been realized that we can play a major role not only in mapping but resource and environmental monitoring in general. The sustainability of this programme depends on the capacity inside the directorate of forestry to understand and adopt these in annual programmes, the costs of implementing the components, the activeness of the National Biodiversity Taskforce and the persistence of biodiversity conservation on the global agenda. So far, the capacity within the directorate is improving. The costs of biodiversity conservation can be absorbed by current levels of recurrent expenditure, which require from time to time, to be augmented by the occasional development budget. In addition, national interest in biological diversity is not only in government but also outside in environmental NGO's and international conservation bodies such as WWF, IUCN and regional bodies such as SADC. These factors tend to favour the sustainability of the biodiversity programmes.

The national forest programme has also demonstrated our potential to manage and otherwise control forest and wildfires and also to demonstrate the use of prescribed fires as used in range management.

Because we have a nationally adopted document, it is now a lot easier for the forest service to direct donor funding. It is a well-known thing that donor co-ordination is one of the most difficult things to achieve by a developing country.

Factors contributing to the poor implementation of NFP

The implementation of the NFP for Namibia has been in operation for just under 4 years and happening within a historically neglected sector some "teething problems" could be expected to affect the effectiveness of the programme. A few of these are described here.

During the planning process and up to the third year of implementation, there were very few Namibians who grasped the concept of strategic planning. The process of planning was, run by expatriate civil servants, consultants and a few Namibians. This was because some were in training and the ones who were present were slow to adopt the new thinking required top think in strategic terms and order their priorities and annual operational plans to achieve the objectives. Today a number who have attained degree level of education have returned. However, it takes time for them

to fully understand the concepts involved in strategic planning and the concept of performance management which is behind the definition of strategic objectives, result areas, indicators and annual operational action plan. Hence the NFP has been frustrated by inadequate internal capacity. This is changing slowly and is helped by our induction programme, which attempts to address the earlier shortcomings.

In addition to inadequate numbers of trained staff, existing staff have, had difficulty adopting a new way of thinking and acting. This means that members of the directorate have had to be convinced that their individual actions ought to lead to the collective achievement of the directorate's objectives over a defined time period. Before that people have assigned a lot of their time on activities, which are not coherent and have no clear objectives in mind.

Despite our efforts as a directorate to gain legitimacy as a provider of public goods and services, the forest sector is still underrated by many, especially because most of its goods such as energy, construction materials, ecosystem value and so on, are not traded formally and because of the absence of traditional industrial plantations. Despite this shortcoming the image and appreciation of the sector is slowly improving. The often- expressed sentiment that the forest sector can only demonstrate its worth through plantations, even if environmentally controversial is still an issue that we have to tackle.

Despite the fact that most forest problems are caused by activities outside the sector such as cultivation, fires, poverty, population pressure, forestry development is still seen as the responsibility of the Directorate of Forestry. This is quite evident in the control of fires, which for convenience is viewed as forestry's problem, even if fires burn huge pastures that should concern range management specialists in the livestock division of agriculture.

A major issue related to the management of forests as a biological and physical entity is that, other than fire management and control over harvesting, virtually no substantial area of natural forest is under a well tested and sustainable harvesting regime. With the implementation of our the community based forest management programme associated with the establishment of community forest reserves, and with the greater capacity to generate inventory data for management planning, the situation is likely to change and by the year 2005 we expect to have at least 5 major community forest reserves to be under sustainable management regimes.

Summary and conclusions

Namibia has clearly made an earnest attempt and developed a national forestry programme in the form of a National Forestry Strategic Plan of 1996. The plan has 4 broad programme areas namely, institutional capacity building, community level management of natural forests, environmental and farm forestry. The philosophies underpinning these programmes have been described and areas in which achievements ought to be made have been identified within the strategy.

Due to the will of the Government of Namibia and donor support, notably Finland, Denmark, Germany and Sweden, the strategy represents one of the few that have been implemented immediately after its development and national adoption.

The forestry programme is still very much in its incipient stages of implementation and insufficient experience has been gathered since programmes have not been running for long into their life spans. It requires another 5 years or thereabouts to be able to assess whether the mid-term objectives of the strategy have been met.

The implementation of the national forestry strategy is still *weak in the areas of private sector involvement*. This is partly explained by the low yielding status of the natural forests after almost a century of exploitation without due management considerations and also environmental limits to the development of industrial plantations. *Income generation and farm forestry* to improve farm productivity and maintenance of soil fertility through forestry is also weak and initial attempts are only being made now to address these.

The forest sector is making progress but it *has yet to overcome its traditionally underrated image*. It has to attempt to overcome this by getting more involved in collaborative programmes such as biodiversity conservation, fire management at the national level, regional land use planning bodies, income generating projects and a greater role in the forestry advisory council provided for in the new forest bill.

Implementation of the national programme is still suffering from insufficient qualified and experienced staff despite the successful training programme, which is already producing results.

A major issue for the sector is the adoption of Criteria and Indicators, which needs to be tested since it could be used by the forest sector to garner more political support for its programmes.

For now it appears that financing of forestry programmes has enjoyed both government and donor support. However, financing is likely to go down, especially from donors since Namibia is considered a middle-income country by African standards despite having one of the most skewed income distributions in Africa since 5% of the population control about 80% of the income. This is likely to be negative to funding for forestry, which traditionally suffers even in countries, which have huge industrial plantations. However the economic contribution of the forest sector, the political support it enjoys suggest, and given the small size of the forest service, the current national forestry programme will be sustained even if scaled down due budgetary constraints.

References

Namibia Forestry Strategic Plan 1996. Directorate of Forestry, Ministry of Environment and Tourism.

First National Development Plan (NDP1) Volume 1. 1995/1996-1999/2000. National planning Commission. Windhoek. Namibia.

Draft Forest Bill of Namibia 1999. Directorate of Forestry, Ministry of Environment and Tourism.

Namibia's National Forestry Policy of 1996. Directorate of Forestry, Ministry of Environment and Tourism.

A Revised National Forest Policy for Namibia, 2000. Directorate of Forestry, Ministry of Environment and Tourism.

Forestry Sector Paper 2000. *First Draft* Second National Development Plan (NDP1) Volume 1.

H.O. Kojwang and M. Chakanga 2000. Trees- outside-forests assessment in Namibia: a contribution to the Forest Resources Assessment 2000 report, for the FAO.

H.O.Kojwang 2000. Forestry outlook study for Africa – Namibia (Draft) country report. Submitted to the FAO.
