

FOREST FINANCE

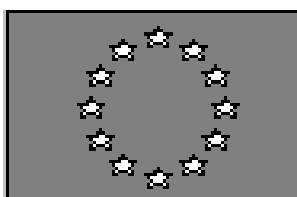
The forest revenue system and government expenditure on forestry in Nigeria

A paper prepared for the FAO work-programme component on financing sustainable forest management

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THE FOREST REVENUE SYSTEM AND GOVERNMENT EXPENDITURE ON FORESTRY IN NIGERIA

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INFORMATION NOTE ON THE FAO PROGRAMME ON FOREST FINANCE

It is generally accepted that financial considerations represent one of the most important factors that can have an impact on the implementation of sustainable forest management. With this in mind, the FAO Forestry Department has implemented a programme of work on forest finance, to examine how government policies (in forestry and other sectors) affect financing in the forestry sector and the consequences of such policies for sustainable forest management.

One of the most important ways in which governments can have an impact on financing in the forestry sector is through the fiscal policies that they implement within the sector. Where forests are owned or managed by the state, the way in which charges for the use of forest resources are determined and implemented can have a major impact on the scale and types of investment in the sector. A vast literature has developed over the last 30 years examining this topic. Other fiscal policies, such as taxes and subsidies both within and outside the sector, can also have a significant impact on the forestry sector.

The purpose of this work will be to review the impact of current fiscal policies on sustainable forest management, along with other related policies, such as land tenure, which have an impact on forest financing. However, the work will attempt to go beyond simple financial analyses of current policies (which have largely been done before) to examine the broader social, institutional and political aspects of policy reform. It is hoped that this work will assist forestry administrations to identify practical ways in which they can revise their fiscal policies, so that they can more easily pursue the goal of sustainable forest management.

This work has been funded through the FAO Regular Programme and the EC Tropical Forestry Budget Line (FAO-EC Partnership Project on Sustainable Forest Management in African ACP Countries). A large part of the work has been produced by national consultants and institutions, with the supervision and assistance of FAO.

Working papers are being produced and issued as they arrive. Some effort at uniformity of presentation is being attempted, but the contents are only minimally edited for style or clarity. FAO welcomes from readers any information that they feel would be useful for this work. Such material can be mailed to the contacts given below, from whom further copies of these working papers, as well as more information about this programme of work, can be obtained:

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ABSTRACT

This report presents a general overview of forest revenue system formulation, collection and use in the forestry sector in Nigeria. It gives a brief historical background of forest revenues in Nigeria, then describes the forest revenue structure, models for assessing forest charges, types of fees, level of charges and concession arrangements. It looks at how fiscal policies in the sector and policies in other sectors affect sustainable forest management practices. It shows that, despite the importance of the forest resource for the sustenance of the rural population and its economic importance to the whole population, the forestry sector does not contribute sufficiently to the economy of the country. This is because of the weakness of the forest revenue system and the lack of attention paid to revenue generation from non-wood forest products. These problems result in low budgetary allocation to the sector and ineffective revenue sharing amongst all stakeholders. The report shows that the forest revenue system is characterised by low product price levels and inadequate monitoring, which results in widespread tax evasion, illegal logging and waste. The revenue system needs to be reformed to create an enabling environment for sustainable forest management. The report recommends that all stakeholders should be involved in decision-making about forest revenue system formulation, revenue collection and sharing. It also recommends a relaxation of all forms of wood export restrictions and a reorganisation of the forest revenue system.

EXECUTIVE SUMMARY

The first forest charges were introduced into Nigeria during the colonial era, when a variety of charges were introduced with the aim of discouraging farmers from destroying trees as part of their shifting cultivation activities. As time went on, the Nigerian forest revenue system developed to include: new legislation to formally assign authority for assessing forest charges; the development of models for assessing charges, the introduction of new types of fees, changes in the level of charges; the development of concession arrangement for forest harvesting; and revenue sharing formulae.

The various states in Nigeria operate different types of charges, the main ones of which are: stumpage fees; out-turn volume fees; and unit area charges. There are also charges levied on different types of machinery used in the forest industry and charge on the production of non-wood and minor forest products. The level of these charges varies from state to state and from species to species. The southern states derive most of their revenues from stumpage, out-turn volume and unit area charges and charges on machinery. On the other hand, most of the northern states rely on charges on non-wood and minor forest products for the majority of their forest revenues.

Stumpage fees, which are the most widely used type of forest charges, vary from as much as N 1,500 per tree for species such as Teak, to as low as N 50 for species such as *Brachystegia*, depending on the quality, availability and demand for the wood involved. Out-turn volume fees vary from N 2 per cubic foot for *Gmelina* in Kogi State, to as high as N 70 per cubic foot for Teak and *Afzelia*. The unit area charge depends on the stocking of the forest and may be between N 2,500 and N 4,200 per hectare cut. Other charges on the forestry sector include: development levies; contractors registration fees; application fees; ground rent; and property hammer (pass hammer) registration fees. Some revenue is also derived from fines and auctioning of confiscated products.

Charges on non-wood and minor forest products are not as high as those on timber. They range from N 10 per month per person for producing reading slates to N 200 per person per month for collecting fire wood in Taraba State.

The administration of forest charges is the responsibility of the State Forestry Services, while the government has the power of approval. Because of the dual ownership of natural forests, forestry services decide on the level and type of logging activities that will be allowed. However, these decisions are largely based on pressure from government to collect high levels of forest revenue, rather than on the principles of good forest management. For example, revenue targets in any year are often determined by the level of revenues obtained in the previous year. If revenue collection is high in a year there is likely to be an increase in the target for the following year and *vice-versa*. Forest charges are collected at the regional headquarters, by forest guards, at road blocks and by patrol teams.

In most states, there has been a significant improvement in revenue generation over the last decade, particularly in the last three years (1997 to 1999). The main sources of forest revenues are charges on timber in the rainforest states of Ondo, Oyo, Osun, Edo, Ekiti and Ogun that, in total, account for about 63 percent of total revenue collection in Nigeria. Other sources of forest revenues are: charges on pole production (18 percent); non-wood and minor forest product charges (13 percent); fuelwood charges (3.5 percent); licences fees (2 percent); and forest recreation fees and penalties for forest offences (both less than one percent).

The forestry sector is funded through a number of government institutions, such as: the Federal Department of Forestry; the Forestry Research Institute of Nigeria; forestry departments in the various universities; and various schools of forestry and vocational training centres. Each of these institutions has specific responsibilities to carry out various activities. However, the performance of these institutions has suffered due to the low level of funding in the last ten years.

A number of forestry projects have received foreign assistance in the last ten years, from agencies such as: the Food and Agriculture Organisation of the United Nations (FAO); the United Nation Development Programme (UNDP); the Government of Finland; the World Bank; the African Development Bank (ADB); the European Union (EU); the International Development Association (IDA); and the Global Environment Facility (GEF).

The forest revenue system in Nigeria is weak and inefficient and is not designed to maximise the diverse range of benefits that could be produced from Nigeria's forests. Poaching and illegal harvesting are rampant, causing the Government to lose huge amounts of potential revenue. The attitude of the current administration towards forestry is encouraging and it is hoped that sufficient funds will be made available to the sector in coming years. This attitude may also lead to a solution of some of the current problems in the forestry sector, with a relaxation of all forms of wood export restrictions, a reorganisation of the forest revenue system and the involvement of all stakeholders in revenue system formulation, collection and sharing.

1 INTRODUCTION

1.1 *Background information*

A variety of resources abound in the forests of Nigeria and they include soil and its mineral deposits, water sources, rock outcrops, rare landscapes and, in the biological sense, plant and animals in all their various forms. The forest is, therefore, an economic treasure house of resources and if properly managed Nigeria's forests can supply its people's needs in perpetuity (Hissain, 1987). These resources are important because of the value that society attaches to them. Timber, for example, is universally enjoyed for its varying and various functions. Although fruits, fungi, herbs, bees and other non-timber do not enjoy the universality and the versatility of timber they are also important. There is, therefore, a wide range of demand for these resources and, consequently, differences in the sales level and the charges attached to them.

1.2 *Definition of a forest revenue system*

The sale of forest resources is one of the major ways in which government interacts closely with the people through the generation of economic social and cultural activities. These activities become the source of employment for timber contractors, tree takers, sawmillers, timber lorry drivers, machine operators, log rolling crew, timber clerks and gatherers of non-wood forest products. It is from this plethora of activities that government derives its policy for attaining specific forestry goals and implementation of economic development activities. One of the most important aspects of this policy is the forest revenue system, which is essentially the sale of forest goods and services.

The forest revenue system is, therefore, an instrument used by government to achieve various goals and objectives in forest management. It is also a tool for obtaining maximum benefits from the management of forest resources. Such benefits include the stimulation of industrial development, efficiency in the utilisation of wood, promotion of private sector activities in natural forest management and forest plantation development as a business, the enhancement of the marketing of forest products and sustaining the diversity of the forests.

1.3 *A brief history of forest revenue generation in Nigeria*

During the colonial era a variety of forest charges were introduced throughout Nigeria. The first forest law was passed in 1908 and it imposed different fees on offenders, especially farmers, to discourage them from practising their vocation through shifting cultivation. The farmers were thus prevented from destroying trees because of the penalties the law imposed on them. The original intention of forest charges was, therefore, to serve as deterrent measure to preserve the forest. However, with more forest reservation taking place everywhere in the country, forest charges have remained because of the revenue they generate for government. In addition, forest charges have been accepted worldwide as an indication of both the concern for and the value of forest resources.

Since independence, the development of the forest revenue system has been a nagging problem for the forestry sector. Firstly, an effective revenue system must be reviewed from time to time to reflect changes in the economy. Secondly, the models used to determine forest

revenues in the past were not clear. This has led to calls by forest managers for a clearer forest revenue system in the country. In 1981, a study of the forest revenue system was carried out and, in 1993, the Forestry Management, Evaluation and Co-ordinating Unit (FORMECU) organised a national workshop on forest revenue system development in Nigeria. The workshop addressed ways of improving the Nigerian forest revenue system with the objectives of addressing and achieving forestry goals and looking at the problems of forest development in Nigeria.

1.4 Objectives of the forest revenue system

In Nigeria, forest estates are held in trust by the state governments on behalf of the people. In defining the objective of a forest revenue system, therefore, the type of ownership structure and the complexity of forest resources must be taken into consideration. However, whatever system of forest revenues is adopted, it is usually aimed at promoting a sustainable forest management, equity in the distribution of forest benefits to the community, promotion of rural development and stability of the forest resource.

The objectives of the forest revenue system play a significant role in the choice of models for fixing charges on forest products and services. Besides this, other factors, such as disagreement among professional forestry practitioners about what model of forest revenues should be adopted, have to be considered. In Nigeria, the authority responsible for formulating the model for forest charges is the state government. Because the states have independent policies, there are various models existing in the country and the models are not properly harmonised in Nigeria under the federal system of government. In addition, factors such as revenue sharing and the timing of the period of review of the system should be considered in the choice of model.

The objective of this report is to examine the current forest revenue situation in Nigeria with respect to financing forestry institutions from the revenues collected from the forestry sector and from government revenues collected from individuals and other sectors of the economy. It considers how money flows from the forest sector to government and back into the forest sector.

Table 1 *The states within each of the geo-political zones in Nigeria*

Geo-political zone	States
North Central Zone	Kaduna, Kogi, Plateau, Benue, Niger, Nasarawa, Kwara
North East Zone	Borno, Yobe, Bauchi, Adamawa, Taraba, Gombe
North West Zone	Sokoto, Kebbi, Zamfara, Katsina, Kano, Jigawa
South East Zone	Abia, Ebonyi, Anambra, Imo, Enugu
South South Zone	Edo, Delta, Rivers, Cross River, Akwa-Ibim, Bayelsa
South West Zone	Lagos, Ekiti, Osun, Ondo, Oyo, Ogun

1.5 Approach to the report

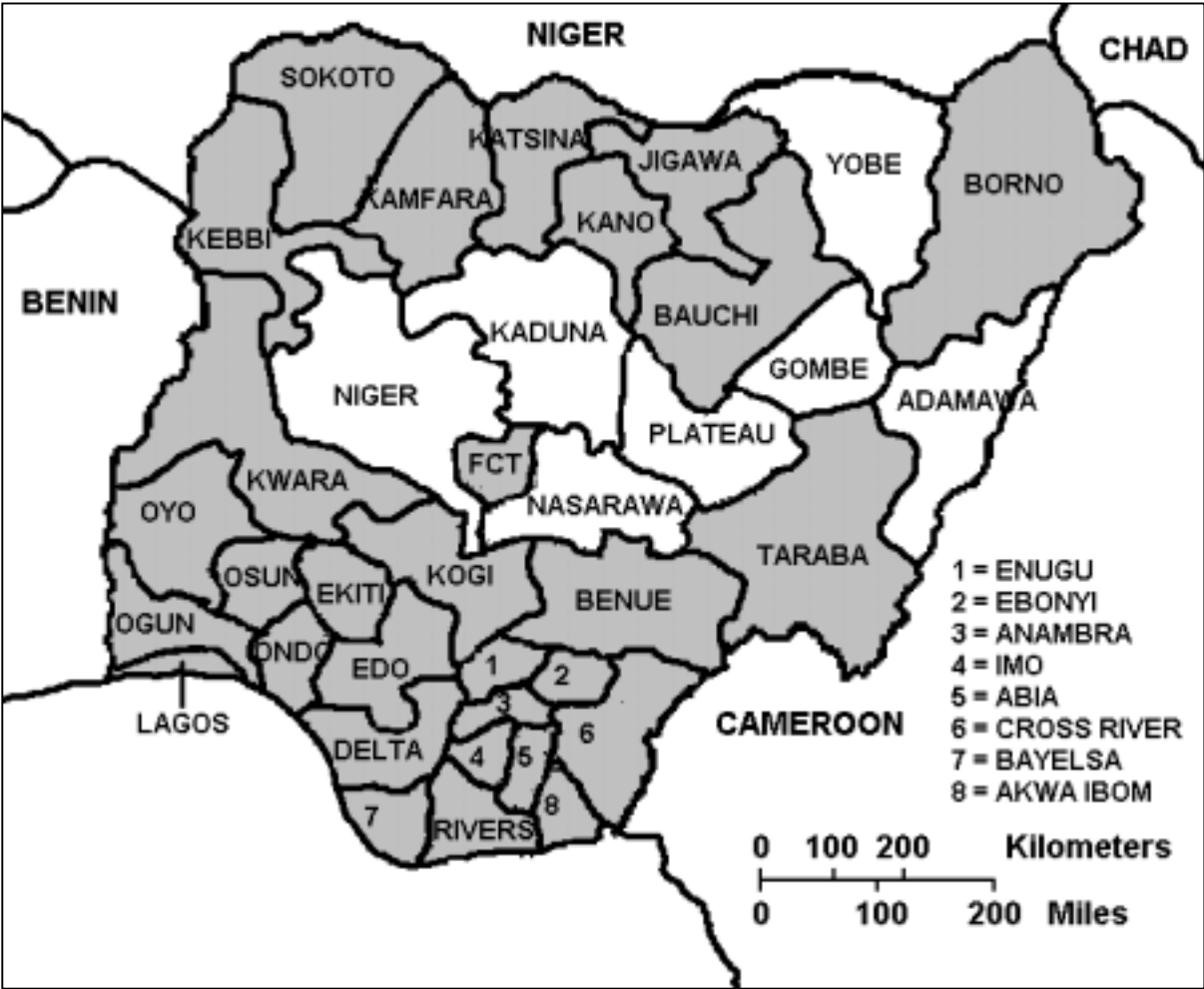
To facilitate the writing of this report, the State Forestry Services in the 36 States of Nigeria were visited by six teams, each covering all of the states within a geo-political zone. The six geo-political zones and the states visited are shown in Table 1.

The teams collected revenue data from each state, using a format structured in line with the terms of reference for the country report preparation. Seven states (Yobe, Gombe, Kaduna, Nasarawa, Adamawa, Niger and Plateau) could not make available any data at the time of preparing the report, despite visits by the teams. The states where data was available about forest revenues are shaded in grey in Figure 1 below.

The most comprehensive reports covering tariffs for individual tree species came from States in the South West and other states like Edo, Taraba, Kwara, Kogi and Benue. The information available from the remaining states, especially the states in the North, was scanty. Kano State made a nil return on revenue, because forestry in the state is regarded as a social service.

This lack of information has limited the scope of the report somewhat.

Figure 1 Map of Nigeria showing the states where data was available about forest revenues



Note: this map has been drawn by FAO to show the location of all of the states in Nigeria and is only an approximation.

2 STRUCTURE OF THE NIGERIAN FOREST REVENUE SYSTEM

Since late 1970's, the collection of forest revenues has been primarily the role of the State Forestry Departments in Nigeria. The structure of the forest revenue system in Nigeria must, therefore, be viewed from the different policies of the thirty-six (36) individual states and the Federal Capital Territory (FCT). Each state has legal and administrative freedom to manage its forests in any way it wishes. However, the structure of the forest revenue system in most states contains the following common elements:

- the authority to regulate and collect forest revenues;
- various models for assessing forest charges;
- a variety of types of fees used;
- different levels of charges to reflect local conditions;
- concession arrangements for long-term and short-term forest harvesting; and
- revenue sharing formulae.

The State Forestry Services and FCT operate various forest revenue systems, which can be summarised as follows:

1. **Timber production fees.** Timber production fees are collected for the removal of timber products such as: sawlogs; veneer logs; poles; pulpwood; and fuelwood. The fees on these products are derived from models based on the following:
 - stumpage values;
 - out-turn volumes (OTV);
 - unit area charges;
 - weight (for pulpwood); and
 - time (for fuelwood).
2. **Industry and enterprise fees.** Industry and enterprise fees include the following:
 - fees for special development funds or afforestation levies;
 - industry license fees;
 - registration fees for holders of property hammers;
 - registration fees for timber contractors;
 - industry license renewal fees;
 - registration fees for forest machinery; and
 - mill relocation fees.
3. **Non-wood and minor forest product fees.** Non-wood and minor forest product fees are based on individual or household needs and time scale and include the following:
 - fees for the collection of leaves;
 - fees for tapping palm and making rafia wine;
 - fees for the collection of chewing sticks;
 - fees for the collection of ropes; and
 - fees for the collection of fruits.

4. **Hunting and recreational forest land-use fees.** Hunting and recreational forest land-use fees include the following:
 - hunting permit fees;
 - permit fees for special game (e.g. buffalo); and
 - fees for permits to reside in the forest.

5. **Penalties for breaking the law.** Legal penalties include the following:
 - fines; and
 - sale of confiscated forest products (usually by auction).

2.1 Timber production fees

The models used to assess forest charges vary from state to state, but are broadly similar to those used in other West African countries. The choice of models used in each state is related to the level of forest wealth and administrative capabilities of each state. States with higher forest cover and forests that are more valuable generally operate a greater variety of revenue models than the poorly forested states.

The three main forest revenue models used in Nigeria are based on stumpage values, out-turn volumes (OTV) and unit area charges. The use of each of these models across the different states in Nigeria is shown in Table 2.

Table 2 *The distribution of models (by state) used to assess forest charges in Nigeria*

States	Natural forests			Forest plantations		
	Stumpage	OTV	Area	Stumpage	OTV	Area
Abia	x			x		
Adamawa	x		x			
Akwa Ibom	x	x		x	x	
Anambra	x	x		x	x	
Bauchi	x	x		x		
Bayelsa	x	x		x		
Benue	x	x			x	
Borno	x			x		
Cross River	x	x		x	x	
Delta	x		x	x		
Ebonyi	x	x		x	x	
Edo	x		x	x		
Ekiti	x	x	x		x	
Enugu	x			x	x	
Gombe	x	x		x		
Imo	x			x		
Jigawa	x		x	x		
Kaduna	x	x		x	x	
Kano	x		x	x		
Katsina	x			x		
Kebbi	x			x		
Kogi	x			x		
Kwara	x			x		
Lagos	x			x		
Nasarawa	x			x	x	
Niger	x			x		
Ogun	x	x	x		x	
Ondo	x	x	x		x	
Osun	x	x		x	x	
Oyo	x	x		x	x	
Plateau	x			x	x	
Rivers	x			x		
Sokoto	x			x		
Taraba	x		x			
Yobe	x					
Zamfara	x					
FCT						

Source: Skoup (1989).

2.1.1 Fees based on stumpage values

Where standing timber is sold on the stump, the term stumpage is used. It is the earliest method of assessing fees payable for exploiting timber in Nigeria and is an *in situ* method. The value of standing timber is determined by deducting the cost of harvesting and marketing from the value of the roundwood. The remainder is then divided into an allowance for profit and risk (for the producer) and the stumpage fee (for the forest owner).

In every state, the State Forest Service has a list of tariffs for all commercial tree species, which is revised periodically (see the following tables and figures for further details).

This method is used in all of the States within the southern forest zone of Nigeria for trees taken from outside and within the forest estate. The stumpage rate varies from state to state, based on economic value and availability of the species as well as the level of revenue envisaged. In addition, different rates are charged depending on whether the trees are taken from inside or outside the forest estate, reserves or concessions. For example, the stumpage for *Azela africana* varies from N 26 per tree in Enugu State to as high as N 750 per tree in Ondo State. This variation may be due to the combination of relative abundance and low demand for this species in one state (Enugu) compared with non-availability and high demand in the other (Ondo).

In addition, the stumpage rate also varies by species. For example, in Oyo State the stumpage rate is as low as N 55 per tree for *C. odorata* but is as high as N 250 per tree for *Azela africana*, *Mitrygina* and *Triplochiton*, depending on the quality and the demand for the species concerned. The stumpage rate also varies over time and depending on the quality of wood (see Table 5 and Table 6). In all cases, high stumpage rates are a strategy to protect the first-class trees, such as *Melicia excelsa* and *Entandrophragma spp*, which are particularly threatened in dry lowland rainforest areas such as those found in Enugu State and Anambra State.

Table 3 *Stumpage fees for a selection of states and species in Nigeria in 2000 (in Naira per tree)*

Species	Ekiti	Ondo	Ogun	Kwara	Kogi	Lagos	Taraba	Benue	Edo	Osun
Teak	1,500	1,000			1,500	300		1,500	100	
<i>Diospyros</i>	1,200	750	500	500	180	200	70	144	100	500
<i>Gmelina</i>	1,000	500		1,200	200			1,000	200	
<i>Masonia</i>	1,000	750	500	2,000	225	300		288	300	500
<i>Lophira</i>	900	500	350	1,000		300			300	150
<i>Cordia spp</i>	700	600	350			300			200	350
<i>Brachystegia</i>	600	500	250	400	200	250	50		200	250
<i>Sterculia oblonga</i>	500		250	1,000		200	70	480	100	250
<i>Pterygota</i>	450	200	150	800	150			288	100	150
<i>Alstonia</i>	400	200	150	400	250	250	150	288	100	150
<i>Vitallaria</i>	350	200			250		120	240		
<i>Entandrophragma</i>	500	375	900	1,000	600	300		1,008	300	300
<i>Khaya</i>	650	500	1,200	800	600	300	240	1,008	300	300
<i>Melicia</i>	900	500	1,200	1,000	600	300	240	1,103	400	500

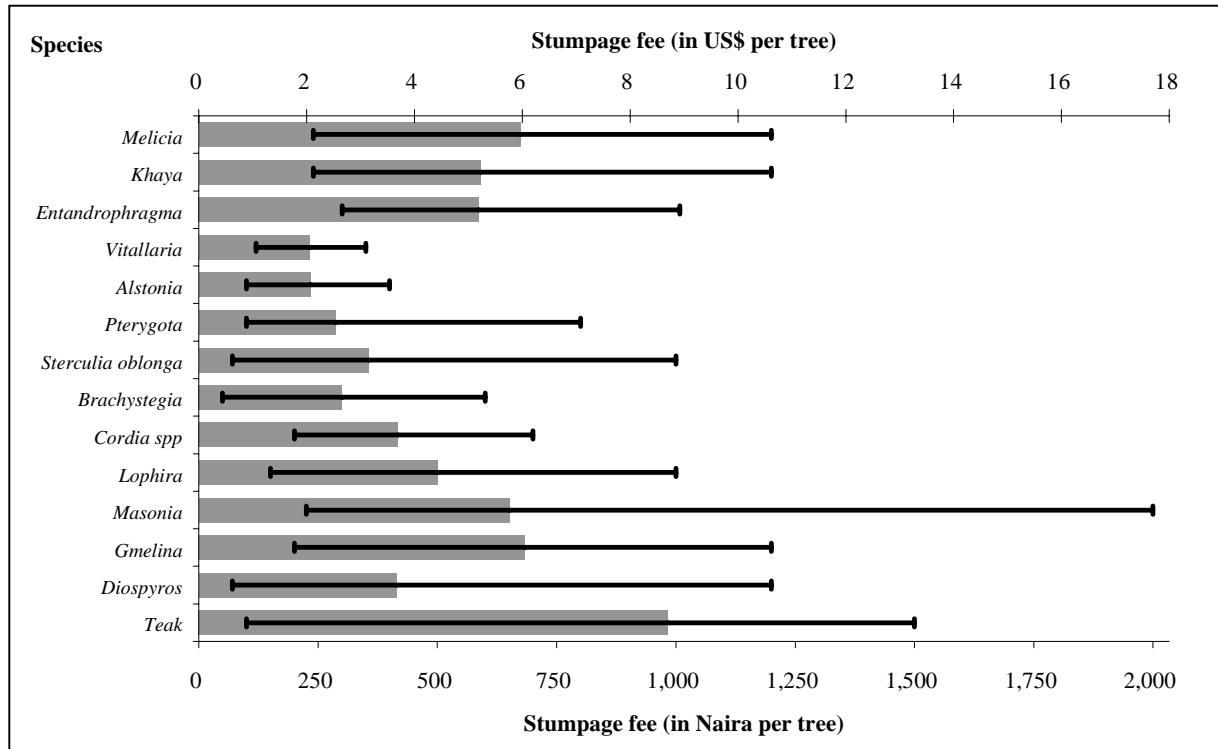
Source: data collected from the field.

Table 4 *Stumpage fees for a selection of states and species in Nigeria in 2000 (in US\$ per tree)*

Species	Ekiti	Ondo	Ogun	Kwara	Kogi	Lagos	Taraba	Benue	Edo	Osun
Teak	13.27	8.85		0.00	13.27	2.65		13.27	0.88	
<i>Diospyros</i>	10.62	6.64	4.42	4.42	1.59	1.77	0.62	1.27	0.88	4.42
<i>Gmelina</i>	8.85	4.42		10.62	1.77			8.85	1.77	
<i>Masonia</i>	8.85	6.64	4.42	17.70	1.99	2.65		2.55	2.65	4.42
<i>Lophira</i>	7.96	4.42	3.10	8.85		2.65			2.65	1.33
<i>Cordia spp</i>	6.19	5.31	3.10			2.65			1.77	3.10
<i>Brachystegia</i>	5.31	4.42	2.21	3.54	1.77	2.21	0.44		1.77	2.21
<i>Sterculia oblonga</i>	4.42		2.21	8.85		1.77	0.62	4.25	0.88	2.21
<i>Pterygota</i>	3.98	1.77	1.33	7.08	1.33			2.55	0.88	1.33
<i>Alstonia</i>	3.54	1.77	1.33	3.54	2.21	2.21	1.33	2.55	0.88	1.33
<i>Vitallaria</i>	3.10	1.77			2.21		1.06	2.12		
<i>Entandrophragma</i>	4.42	3.32	7.96	8.85	5.31	2.65		8.92	2.65	2.65
<i>Khaya</i>	5.75	4.42	10.62	7.08	5.31	2.65	2.12	8.92	2.65	2.65
<i>Melicia</i>	7.96	4.42	10.62	8.85	5.31	2.65	2.12	9.76	3.54	4.42

Source: data collected from the field.

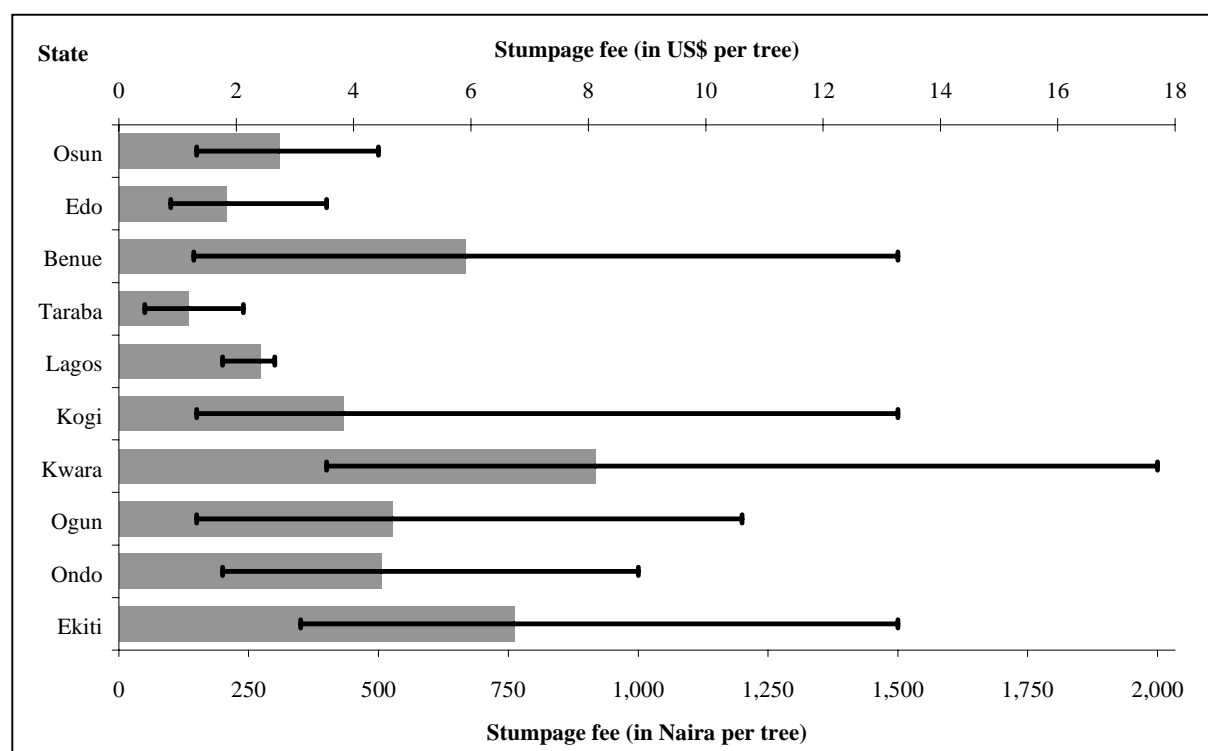
Figure 2: *Average, minimum and maximum stumpage fees for a selection of species in Nigeria in 2000 (in Naira and US\$ per tree)*



Source: data collected from the field.

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Figure 3: Average, minimum and maximum stumpage fees for a selection of states in Nigeria in 2000 (in Naira and US\$ per tree)



Source: data collected from the field.

Some historical data on stumpage rates in Nigeria is given in the two tables below.

Table 5 Average stumpage rates (per tree) for trees of different grades from the natural forest in Nigeria in 1993

State	Grade 1 species (high priced species)		Grade 2 species (medium priced species)	
	Naira	US \$	Naira	US \$
Oyo	120	5.23	30	1.31
Ogun	120	5.23	45	1.96
Ondo	80	3.49	20	0.87
Osun	250	10.89	100	4.36
Edo	400	17.44	100	4.36
Cross River	420	18.30	120	5.23
Benue	138	6.01	56	2.44
Lagos	50	2.18	20	0.87

Source: FORMECU (1993).

Table 6 Stumpage rates (per tree) for Teak and Gmelina trees from plantations in selected southern States of Nigeria in 1993

State	Teak		Gmelina	
	Naira	US \$	Naira	US \$
Oyo	120	5.23	43	1.87

Ondo	150	6.54	80	3.49
Edo	400	17.43	100	4.36
Benue	138	6.01	60	2.61
Lagos	30	1.31	20	0.87
Ogun	400	17.43	n.a.	n.a.
Cross River	50	2.18	80	3.49

Source: FORMECU (1993).

This method of timber sale can be used to create public awareness, especially in areas without a forest estate. It also encourages the full utilisation of trees because, since all of each tree is paid for, the tendency is that the buyer will use as much of the tree as practicable in order to maximise profit. This, in a way, also has the advantage of protecting the environment by reducing the rate of exploitation of the forest. The tendency to protect the environment is enhanced further by the use of a specified girth limit to restrict tree felling and ensure that vegetation is not unduly destroyed.

Timber sales based on stumpage value are less costly and easier to administer than other methods and require relatively limited person-hours to complete sales agreement. They also allow for direct public participation in the sale procedure, because the owners consent in writing is a prerequisite for the issuance of harvesting permit. However, this method requires a high degree of honesty on the part of both the buyer and the government officials who are administering the sale.

3.1.1 Fees based on out-turn volume (OTV)

This system is used for concessionaires who fell trees from concession areas without the use of the permit system. OTV requires the measurement and estimation of the actual volume of wood removed from the forest and, as such, is more precise than a per-tree fee, which does not consider differences in height and girth. The fee is based on the estimated volume of each log (calculated using approved tariff tables) in states like Ogun, Ondo, Oyo and Osun. The OTV method is also operated as pre-paid system in some states, where the total amount of fees has to be paid before wood is removed from the forest. This is done to prevent fraud and loss of revenue by the government.

Disadvantages. The main disadvantage of this method is that it is labour intensive and time consuming. For example, it requires a team of thirteen men and several person-days to conduct a proper OTV sale (Wamugimda, 1971). The system also encourages the over-exploitation of high value tree species and under-exploitation of lesser-known species, so it does little to encourage efficient forest management and utilisation. Producers harvesting wood under the OTV system are very selective in what they take in terms of species, size and the shape of trees, leading to under-utilisation of the forest. In addition, the bills for total fees (based on the measurement and estimation of volumes) are sent to the office, where the supervising officer is handicapped by lack of transportation to cross-check field information. This creates room for collaboration between field officers and contractors to defraud government. Many saplings are also destroyed under this system because of the extensive nature of harvesting (i.e. low harvesting intensity) that also often occurs under this system.

Advantages. Despite its shortcomings, the OTV system is easily understood by the seller and the buyer and is used widely in the high forest zone of Nigeria. For instance, in 1987, 66 percent of the total revenue accruing to government from the forestry sector was from OTV sales (Adeyoju and Enabor, 1988). In 1990, the percentage dropped to 60 percent, because of the identification of other sources of revenue and a reduction in the area of forest reserves being exploited. Also, since areas exploited under the OTV system are usually partially opened, it often results in minimal damage to the forest habitat for wildlife. In addition, the trees left over from an OTV sale, particularly the secondary or lesser-known species, help to control erosion and protect catchment areas in swamps and other areas with difficult terrain.

Trends in OTV charges. In the past, particularly between 1960 and 1979, there was only a gradual increase in the tariff rates for timber in the South West, with revisions in: 1969; 1974; 1979; and 1988. In recent times however, there has been a more pronounced increase in OTV fees. These increases might have been caused by the ban on the export of unprocessed logs and high domestic demand for wood for construction. Table 7 and Table 8 show that, while there has been a general increase in OTV charges in local currency (Nairas), these charges have declined in US\$ terms. This suggests that these charges should be increased to reflect more accurately the value of the wood in dollar terms.

Among the various species, OTV charges also depend on the grade of wood (see Table 7 and Table 8). The first class woods, such as *Azelia spp*, Teak (*Tectona grandis*) and *Cordia*, attract high charges, while *Triplochiton*, *Gmelina* and *Diospyros* are sold for lower prices in all states. There are also variations in charges from state to state for a given species. For example, the charge for Teak is as high as N 70 per cubic foot in Ekiti and Taraba states and as low as N 1.50 per cubic foot in Kogi State. The charge for *Triplochiton* is as high as N 56

per cubic foot in Taraba State and as low as N 3.50 per cubic foot in Kogi State. Even within any particular state, charges vary from one species to another with, for example, Ondo State levying a different charge for each of the main species groups, from N 19 per cubic foot for *Diospyros* to N 68 per cubic foot for teak (see Table 9 and Table 10).

Table 7 Trends in out-turn volume (OTV) charges by species grade 1962 – 2000 (in Naira per cubic foot)

Years	Grade 1 species	Grade 2 species	Grade 3 species
1962	2.08	1.73	0.55
1969	2.54	1.77	0.35
1974	2.50	2.77	0.69
1979	14.00	14.00	5.60
1988	78.50	44.00	33.66
1993	82.00	52.00	40.00
2000	94.50	65.60	51.70

Sources: data from (FORMECU, 1993) and from the field survey.

Table 8 Trends in out-turn volume (OTV) charges by species grade 1962 – 2000 (in US\$ per cubic foot)

Years	Grade 1 Species	Grade 2 Species	Grade 3 Species
1962	1.04	0.87	0.18
1969	1.27	1.39	0.15
1974	1.32	1.46	0.36
1979	7.65	7.65	3.06
1988	15.70	8.80	6.73
1993	2.73	1.73	1.33
2000	0.84	0.58	0.46

Sources: data from (FORMECU, 1993) and from the field survey.

Table 9 Out-turn volume (OTV) charges by species and state in 2000 (in Naira per cubic foot)

State	Teak	Gmelina	Khaya	Triplochiton	Diospyros	Cordia	Afzelia	M excelsa
Ondo	68.00	26.00	40.00	38.00	19.00	50.00	28.00	38.00
Ekiti	70.00	30.00	40.00	40.00	30.00	55.00	30.00	40.00
Kogi	1.50	2.00	4.50	3.50	1.50		4.50	4.50
Osun				15.00	15.00	15.00	15.00	15.00
Taraba	70.00	42.00	56.00	56.00	56.00	70.00	70.00	70.00
Ogun			25.00	45.00		25.00	60.00	40.00

Source: data collected from the field.

Table 10 Out-turn volume (OTV) charges by species and state in 2000 (in US\$ per cubic foot)

State	Teak	Gmelina	Khaya	Triplochiton	Diospyros	Cordia	Afzelia	M excelsa
Ondo	0.60	0.23	0.35	0.34	0.17	0.44	0.25	0.37
Ekiti	0.62	0.27	0.35	0.35	0.27	0.49	0.27	0.35
Kogi	0.01	0.02	0.04	0.031	0.01		0.04	0.04
Osun				0.13	0.13	0.13	0.13	0.13
Taraba	0.62	0.37	0.50	0.50	0.50	0.62	0.62	0.62
Ogun			0.22	0.40		0.22	0.53	0.35

Source: data collected from the field.

4

4.1.1 Unit area charges

The unit area charge is popular in the high forest states of Ogun, Ondo, Edo, Ekiti and Delta states. Fixing tariff rates on the basis of area involves classifying forests into zones according to the richness of the area in terms of: species composition; stocking; proximity to markets or ports; and the nature of the terrain (Obaseki, 1970). A fixed rate is charged per hectare cut in each zone. These rates can be derived from the average out-turn volume per hectare over previous years (Mervart, 1972).

In Oyo State, forest reserves are classified into two zones. Zone 1, which includes Shasha, Ago-Owu and Ipetu-Ikeji forest reserves, is classified as rich forests and charges are N 600 per hectare, while the remaining forest reserves are classified as Zone 2. The forests in Zone 2 are poor and charges are much lower, at rates of N 250 to N 350 per hectare. In Ondo State, forest reserves are classified according to yield and the unit area charges vary between N 220 and N 420 per hectare. These rates are in addition to payments made to cover the cost of reforestation (the reforestation levy), which are fixed at N 30 per hectare.

Higher returns and reduced incidence of fraud can be obtained with this method of sale, but this requires the availability of reliable management information and an efficient work force.

Table 11 Trends in unit area charges (per hectare) in Ekiti State Forest Reserves

Forest reserve	Year									
	1996		1997		1998		1999		2000	
	Naira	US \$	Naira	US \$	Naira	US \$	Naira	US \$	Naira	US \$
Ikere	2,500	30.30	2,500	29.76	3,500	38.89	3,700	35.24	3,700	32.74
Ogbese	2,500	30.30	2,500	29.76	3,500	38.89	3,700	35.24	3,700	32.74
Ogotun	2,500	30.30	2,500	29.76	3,500	38.89	3,800	36.19	3,800	33.28
Ise	2,500	30.30	2,500	29.76	4,000	44.44	4,200	40.00	4,200	37.17
Aramoko	2,500	30.30	2,500	29.76	3,500	38.89	3,700	35.24	3,700	32.74
Little Ose	2,500	30.30	2,500	29.76	3,500	38.89	3,700	35.24	3,700	32.74

Source: data collected from the field.

There has been a steady increase in charges based on unit area (see Table 11). For example, in Ikere Forest Reserve in Ekiti State, the charge was increased from N 2,500 per hectare to N 3,500 per hectare in 1998 and, again, to N 3,700 per hectare year in 1999. In the same way, the unit area charge has increased from N 2,500 per hectare in 1996 to N 4,200 per hectare in 2000 in Ise Forest Reserve. As Table 11 shows, the unit area charge also varies from one forest reserve to another within the State.

Highly forested states, such as Cross River State in particular, do not operate this system but rely more on the OTV and stumpage system of revenue collection.

4.1.2 Ground rent

In Ekiti and Ondo states, ground rents are paid annually for forest reserve allocation. This is N 200 per hectare per year in Ekiti State and N 150 per hectare per year in Ondo State.

4.1.3 Fees for the collection of fuelwood

In most of the southern states in Nigeria, fuelwood from urban and fuelwood plantations are sold in cords of 1.3 m x 1.3 m x 2.6 m, at prices between N 40 and N 50 per cord. Forest plantation thinning are also sold in cords. However, where fuelwood collection is allowed in areas used for pole and timber production, the collector usually pays a time-based charge. For example, in Oyo State a fuelwood collector pays N 120 per month to collect fuelwood. This monthly payment is fixed arbitrarily and does not take into account the quantity or quality of wood removed or the market value of fuelwood.

In Benue, N 100 is charged per lorry load of firewood removed, while in Kwara, N 1,500, N 500 and N 100 are charged per lorry load, cord and headload of fuelwood respectively.

The collection of branches, twigs and rejected logs as fuelwood after forest harvesting helps to prevent fire outbreak, reduces fire intensity and the impact of outbreaks of fire. Thus, the removal of debris as fuelwood is a useful forest management strategy.

4.2 Industry and enterprise fees

4.2.1 Special Development Levy

The Special Development Levy is also called the afforestation fund levy or afforestation levy and is a fixed non-refundable charge on large concessions. This charge represents a contribution from forest concessionaires to the development of forest resources. Such levies were first introduced in the South West in 1968 and later in Edo and Delta States. The levy is paid once and for all as a form of ground rent or royalty and is usually paid before logging operations can commence.

The level of this levy is now N 800 per hectare in Ekiti State and N 650 per hectare in Ondo State and this charge is levied for the allocation of a forest concession in a forest reserve. In Edo and Delta states, the Special Development Levy is N 500 per compartment.

This levy is paid in addition to any application fees that are levied. For example, in Ekiti State, a non-refundable application fee is charged for applying for a forest concession. This fee is N 20,000 in forest reserves and N 50,000 in Teak and *Gmelina* plantations. In Ondo State, the application fees are: N 20,000 for forest reserves; N 30,000 for *Gmelina* plantations; and N 75,000 for Teak plantations.

4.2.2 Fees for industry licences and registering machinery

In some states in Nigeria, the owners of wood processing plants have to pay fees before they can install plants and, in addition, pay annual renewal fees for their plants. The major types of plants that are covered by such fees include: sawmills of various sizes; wood based panel mills; match and toothpick factories. In Lagos State, for example, the registration fee for a medium-sized sawmill is N 50,000, with a renewal fee of N 5,000 each year. In Ondo State, a fee of N 65,000 is charged for a similar-sized sawmill, with a renewal fee of N 20,000.

Table 12 *Industry and enterprise fees in some Nigerian states in 2000 (in Naira)*

Industry/enterprise type	State				
	Ekiti	Ondo	Osun	Ogun	Lagos
Small sawmill (Reg)	30,000	30,000	25,000	n.a.	n.a.
Small sawmill (Ren)	7,000	10,000	15,000	n.a.	n.a.
Application fee	20,000	20,000	n.a.	n.a.	n.a.
Medium sawmill (Reg)	65,000	65,000	n.a.	50,000	50,000
Medium sawmill (Ren)	20,000	20,000	n.a.	10,000	5,000
Application fee	20,000	20,000	n.a.	n.a.	n.a.
Large sawmill (Reg)	100,000	100,000	n.a.	n.a.	n.a.
Large sawmill (Ren)	40,000	40,000	n.a.	n.a.	n.a.
Application fee	20,000	20,000	n.a.	n.a.	n.a.
Planing machine (Reg)	20,000	20,000	1,200	n.a.	5,000
Planing machine (Ren)	10,000	10,000	600	n.a.	750
Multiple edger (Reg)	25,000	25,000	n.a.	n.a.	n.a.
Multiple edger (Ren)	12,500	12,500	n.a.	n.a.	n.a.
Plywood or veneer mill (Reg)	100,000	100,000	n.a.	n.a.	50,000
Plywood or veneer mill (Ren)	50,000	50,000	n.a.	n.a.	35,000
Fibreboard mill (Reg)	100,000	100,000	n.a.	n.a.	n.a.
Fibreboard mill (Ren)	50,000	50,000	n.a.	n.a.	n.a.
Particleboard mill (Reg)	100,000	100,000	n.a.	n.a.	50,000
Particleboard mill (Ren)	50,000	50,000	n.a.	n.a.	35,000
Circular resaw bench (Reg)	10,000	10,000	n.a.	n.a.	n.a.
Circular resaw bench (Ren)	5,000	5,000	n.a.	n.a.	n.a.
Power chainsaw (Reg)	10,000	10,000	1,000	1,000	500
Power chainsaw (Ren)	3,000	4,000	500	1,000	250
Pulp and paper mill (Reg)	n.a.	n.a.	n.a.	n.a.	50,000
Pulp and paper mill (Ren)	n.a.	n.a.	n.a.	n.a.	35,000
Match industry (Reg)	n.a.	n.a.	n.a.	n.a.	10,000
Match industry (Ren)	n.a.	n.a.	n.a.	n.a.	5,000
Warehouse (Reg)	n.a.	n.a.	n.a.	n.a.	100,000
Warehouse (Ren)	n.a.	n.a.	n.a.	n.a.	50,000
Wood drying kiln (Reg)	n.a.	20,000	n.a.	n.a.	20,000
Wood drying kiln (Ren)	n.a.	10,000	n.a.	n.a.	10,000
Wood treatment plant (Reg)	10,000	15,000	n.a.	n.a.	20,000
Wood treatment plant (Ren)	5,000	7,500	n.a.	n.a.	15,000
Property hammer (Reg)	12,500	15,000	8,500	30,000	5,000
Property hammer (Ren)	7,500	7,500	5,000	10,000	1,000
Company hammer (Reg)	30,000	30,000	20,000	30,000	n.a.
Company hammer (Ren)	10,000	10,000	6,500	10,000	n.a.
Application fee	n.a.	5,000	1,500	n.a.	n.a.
Circular saw <40cm (Reg)	100,000	n.a.	500	n.a.	2,500
Circular saw <40cm (Ren)	50,000	n.a.	100	n.a.	500
Circular saw >40cm (Reg)	n.a.	n.a.	1,000	n.a.	50,000
Circular saw >40cm (Ren)	n.a.	n.a.	500	n.a.	35,000
Large furniture industry (Reg)	n.a.	n.a.	5,000	n.a.	25,000
Large furniture industry (Ren)	n.a.	n.a.	2,500	n.a.	15,000
Medium furniture industry (Reg)	n.a.	n.a.	2,500	n.a.	25,000
Medium furniture industry (Ren)	n.a.	n.a.	1,250	n.a.	15,000
Small furniture industry (Reg)	n.a.	n.a.	n.a.	n.a.	15,000
Small furniture industry (Ren)	n.a.	n.a.	n.a.	n.a.	10,000
Toothpick industry (Reg)	n.a.	n.a.	n.a.	n.a.	35,000
Toothpick industry (Ren)	n.a.	n.a.	n.a.	n.a.	15,000
Relocation of machine	n.a.	n.a.	n.a.	n.a.	10% of issue

Notes: Reg = registration; Ren = renewal. Source: data collected from the field.

Information obtained from a few states in Nigeria is shown in Table 12. Information about trends in these charges over time is only available for a few states and a few items. For example, fees for registering large sawmills in Ekiti State rose from N 80,000 in 1996 to N 100,000 in 2000, while the renewal fee remained unchanged. Fees for registering other machinery and enterprises, such as: planing machines; multiple edgers; and particleboard mills, also remained constant during this period.

5

5.1.1 Registration fees for property hammers

Osun, Oyo, Ondo, Ogun, Lagos and Ekiti states levy a charge on applications to register and renew property hammers (see Table 12). For private individuals, the registration fees in Ekiti, Ondo and Osun are N 12,500, N 15,000 and N 8,500 respectively, with annual renewal fees of N 7,500, N 7,500 and N 5,000 respectively. Companies pay as much as N 30,000 in some of the states with an annual renewal fee of about N 10,000.

5.1.2 Timber contractors registration fee

At the beginning of each year (or at any other time as required), anyone interested in operating in the timber business is required to register annually as a timber contractor. Registrations made at any time during the year are deemed to expire at the end of the financial year (31st December), at which time every individual ceases to be a registered timber contractor, unless they register again for the following year.

To quote an example, a registration fee of N 5,000 is charged in Kwara State but the annual renewal fee is only N 2,000.

5.2 *Fees for the production of non-wood and minor forest products and services*

Forest revenue from non-wood and minor forest products and services is mostly realised from the issuance of permits to extract or collect products. This includes permits to collect: fuelwood; fruit; seeds; leaves; poles; resins; latex; and honey. Table 13 shows the various changes for permits to extract or collect various items in a selection of states in Nigeria in 2000.

The frequency with which these charges are reviewed varies from state to state. For example, in Ekiti State, the charges for sand, leaves and fruit collection have been reviewed once within the last five years (see Table 14). However, in some states, such as Oyo and Taraba states, charges on these non-wood and minor forest products have not been reviewed in the last ten years. In Taraba State in particular, the charges on leaf collection, tapping wine, collection of ropes and collection of fruits have remained at N 600 per year, N 2,400 per year, N 5,000 per year and N 150 per year respectively, since 1991. This is an indication of the lesser importance attached to these products by state governments, even though they are available in large quantities in these states.

Table 13 *Charges for the production of minor forest products in selected states in Nigeria in 2000*

Items	State							
	Kwara	Osun	Ogun	Ondo	Ekiti	Kogi	Taraba	Benue
Sand, gravel etc.	1,000	n.a.	n.a.	4,800/p/wk	3,500/p/wk	10/lorry	n.a.	100/lorry
Leaves	100/m	500/p/m	n.a.	2,500/p/wk	2,500/p/wk	30/m	600/p/yr	n.a.
Ropes	n.a.	n.a.	n.a.	250/p/wk	300/p/wk	n.a.	5,000/p/yr	n.a.
Chewing Stick	50/m	n.a.	250/p/wk	320/p/wk	300/p/wk	15/m	2,400/p/yr	n.a.
Fruits	100/m	200/p/m	n.a.	1,875/p/wk	1,200/p/wk	20/m	150/p/yr	n.a.
Thatches	n.a.	n.a.	n.a.	70/p/wk	100/p/wk	n.a.	n.a.	n.a.
Firewood	500/Cord	1,000/m	n.a.	1,875/p/wk	1,200/cord	40/cord	n.a.	720/cord
Hunting	n.a.	n.a.	2,500/p/wk	500/p/wk	2,500/p/wk	300	n.a.	n.a.
Resident Permit (P)	10,000	n.a.	3000	n.a.	n.a.	200	n.a.	n.a.
Resident Permit (CO)	20,000	n.a.	n.a.	n.a.	n.a.	1,500	n.a.	n.a.
Poles (Teak)	1500	n.a.	n.a.	1,500	n.a.	750	n.a.	500
Taungya	n.a.	250/ha/yr	n.a.	n.a.	n.a.	n.a.	n.a.	2,400/p/yr
Honey	n.a.	n.a.	5/Stick	n.a.	n.a.	n.a.	n.a.	1,000/p/yr
Tapping Wine	200/m	n.a.	n.a.	250/p/wk	250/p/wk	30/m	2,400/p/yr	2,400/p/yr
Trophy	50/m	n.a.	n.a.	n.a.	n.a.	5/m	n.a.	2,000/p/yr

Notes: m = month; p = person; yr = year; wk = week. Source: data collected from the field.

Table 14 *Trends in charges for the production of some minor forest products in Ekiti State 1996 - 2000*

Product	Year				
	1996	1997	1998	1999	2000
Sand	2,500/p/wk	2,500/p/wk	3,500/p/wk	3,500/p/wk	3,500/p/wk
Leaves	2,000/p/wk	2,000/p/wk	2,500/p/wk	2,500/p/wk	2,500/p/wk
Fruits	250/p/wk	250/p/wk	1,200/p/wk	1,200/p/wk	1,200/p/wk

Notes: p = person; wk = week. Source: data collected from the field.

It is also notable that in some states, such as Edo, Kwara and Osun states, private and corporate bodies who wish to occupy a forest reserve for recreational activities can do so if they pay permit fees ranging from N 300 per year (for private individuals) to N 20,000 per year (for corporate bodies) and do not cause any damage to the forest.

Taraba State has the widest range of minor forest products (about 25), for which permits are issued and revenues are collected by the state government (see Table 15). There are also charges on trade in these products (see Table 16 on page 25). Most (if not all) of these products are available in other states in the country, but little or no attention is paid to them. However, Cross River State is close to Taraba State in terms of capturing the potential of minor forest products to raise forest revenues.

5.3 Legal penalties

5.3.1 Fines

Fines are payments made to the government for contravening forest regulations and laws. In Ekiti State, the penalty for late renewal of a property hammer (after 31st March) is an additional charge of 25 percent of the renewal fee. Unauthorised relocation of a sawmill is

penalised by a fine equal to twice the transfer fee. Failure to keep records of material inputs and outputs is penalised by a fine of N 2,000 for the first offence, N 5,000 for a second offence and N 10,000 for a third offence.

Table 15 Fees for minor forest Product permits in Taraba State in 2000 (in Naira)

Type of permit	Fee
Permit to take firewood	50.00 month/person
Production charge per firewood cord (1 m x 1 m x 2 m)	200.00 month/person
Permit to sell firewood	150.00 month/person
Permit to collect firewood on bicycle/donkey	50.00 month/person
Permit to collect firewood on head	10.00 month/person
Permit to collect firewood on vehicle	150.00/Trip
Permit to collect forked poles	50.00 month/person
Permit to collect poles of less than 25 m	70.00 month/person
Permit to collect <i>Raphia</i> ribs	50.00 month/person
Permit to collect bamboo	50.00 month/person
Permit to tap palm wine	200.00 month/person
Permit to collect Phonix leaves	50.00 month/person
Permit to collect honey	50.00 month/person
Permit to collect charcoal	70.00 month/person
Permit to make Zana Mats	50.00 month/person
Permit to collect Zana Mats	50.00 month/person
Permit to collect assorted leaves	50.00 month/person
Permit to collect Muruchi	30.00 month/person
Permit to collect <i>Terminidus indica</i> fruits	50.00 month/person
Permit to collect <i>Parkia clappertoniana</i> seeds	100.00 month/person
Permit to collect <i>Butyrospermum</i> fruit	50.00 month/person
Permit to tap rubber from <i>ficus</i> and others	50.00 month/person
Permit to tap gum from <i>Acacia spp</i>	50.00 month/person
Permit for Mortar making	As per Stump fee
Permit to make reading slates	10.00 month/person

Source: data collected from the field.

In Ondo State, non-possession of toll fee receipt at the point of loading in the sawmill for vehicles travelling outside the State shall attract twice the toll fee chargeable on the particular size of vehicle. The sawmiller in whose premises the above is committed shall also pay twice the toll fee. Harvesting trees smaller than the minimum girth limit attracts a fine of N 5,000 per tree. Flinching of commercial trees at stump (when approved) attracts an additional fee of N 1,000 per tree on the permit obtained. A breach of this regulation also attracts a penalty of N 10,000 per tree. (This penalty is also applicable in Ekiti State). Teak or *Gmelina* stands cut short of lengths of 12 feet attract an additional fee of N 100 per billet. A breach of this regulation also attracts a fine of N 10,000 per truckload and N 25,000 per trailer load.

A breach of log dressing rules, such as improper scribing, improper painting, illegible property hammer making and incorrect measurement of logs, attracts a fine of N 500 per log in Ondo and Ekiti States. Failure to produce a log certificate on demand attracts a penalty of N 500 per log.

In Osun State the following offences are penalised with fines paid to the government:

- the fine for transporting unmarked logs on any lorry is N 50,000;
- the fine for transporting logs without the necessary documentation is N 25,000;
- the fine for transporting logs outside time stipulated on the transport licence is N 25,000 per lorry load; and
- the fine for sawing logs at night is N 25,000 per sawmill.

5.3.2 Timber sales by auction

Timber is sold by auction (using competitive oral bidding) to dispose of illegal logs without claimant. Before a log is auctioned, a court approval has to be obtained and the law allows the money spent on the auction to be deduced from receipts before the balance is paid into government treasury.

In setting the reserve price of the timber to be auctioned, the organisers of the auction include the costs (felling and other expenses) that would have been incurred by the illegal logger. The final sale price reflects the true value of logs, because bidders freely indicate the prices that they are willing to offer.

If buyers pay for the true value of the timber, it can be inferred that rational buyer will take precautions against wood waste. Thus, this method of sale should encourage the efficient utilisation of the wood. Also, timber auctions provide market information about timber prices for members of the public and, if the price of timber is attractive, this may encourage private-sector tree planting.

6

6.1 *Charges levied on trade in forest products*

6.1.1 **Charges on domestic trade in wood products**

The major sources of revenue from charges on domestic forest products trade are the Inter-State Wood Transportation Taxes. In a number of states, fees are paid on wood transported to other states and the details of these fees are given below.

Ondo State. In Ondo State, for lorries up to 10 tonnes in weight, a fee of N 50 per log is paid on any legally removed log crossing the border to another state. For a vehicle over 10 tonnes in weight, N 100 is charged for each plank and sawlog.

Oyo State. In Oyo State, a fee of N 50 per log is charged on logs going out of the state. Charges on planks vary from N 25 to N 50 per piece, depending on the capacity of the vehicle.

Osun State. In Osun State, transportation of logs out of the state is prohibited. A fee of between N 25 and N 50 per piece is collected on sawnwood transported out of the state.

Ogun State. In Ogun State, charges on transportation to other states include: N 100 per pole; N 1,500 per trailer of planks; N 500 per lorry-load of planks; and N 150 per 10-tonne lorry-load of planks.

Lagos State. In Lagos State, charges on transportation to other states are: N 1,000 for a lorry-load of sawn planks; N 2,500 for a trailer-load of sawn planks; N 500 for lorry-load of billets; and N 1,000 for a trailer-load of billets. Charges on firewood are N 250 per lorry-load and N 500 per trailer-load.

Ekiti State. In Ekiti State, the charge for transporting a log below 12 feet in length to other states is N 1,000, while the charge for logs above 12 feet length is N 2,000. A 10-tonne lorry-load of planks is charged N 1,000, while a trailer-load is charged N 3,000.

Taraba State. In Taraba State, the charges for transporting sawnwood to other states are as follows:

2" x 2" x 12'	- N 50
2" x 3" x 12'	- N 80
2" x 4" x 12'	- N 100
2" x 6" x 12'	- N 140
1" x 12" x 12'	- N 350

6.1.2 **Charges on domestic trade in non-wood and minor forest products**

In most of the states in Nigeria, charges are not levied on trade in non-wood and minor forest products. However, the notable exception is Taraba State. In addition to charges on extraction of some non-wood and minor forest products, the Taraba State Government also collects revenue from traders in these products. Products that are covered by charges on trade include:

split borassus; palm wine; phoenix leaves; honey; charcoal; and fruit. Because these products are numerous, they could constitute a very good source of revenue for government if properly harnessed.

Table 16 *Changes on domestic trade in non-wood and minor forest products in Taraba State in 1993 and 2000 (charges per person per month)*

Product	Year				Total change 1993 - 2000	
	1993		2000		Naira	US\$
	Naira	US\$	Naira	US\$		
Split borassus	100	4.36	250	2.15	+150	-2.21
Palm wine	100	4.36	250	2.15	+150	-2.21
Phoenix leaves	50	2.18	70	0.58	+20	-1.60
Honey	25	1.09	100	0.85	+75	-0.24
Charcoal	30	1.30	100	0.85	+70	-0.45
Zana mats	50	2.18	50	0.43	0	-1.75
<i>Termarindus</i> fruits	50	2.18	50	0.43	0	-1.75
<i>Parkia</i> fruits	100	4.36	100	0.85	0	-3.51
<i>Butyrospermum</i> fruits	20	0.87	70	0.58	+50	-0.29
Rubber	50	2.18	100	0.85	+50	-1.33
Gum Arabic	100	4.36	150	1.25	+50	-3.11

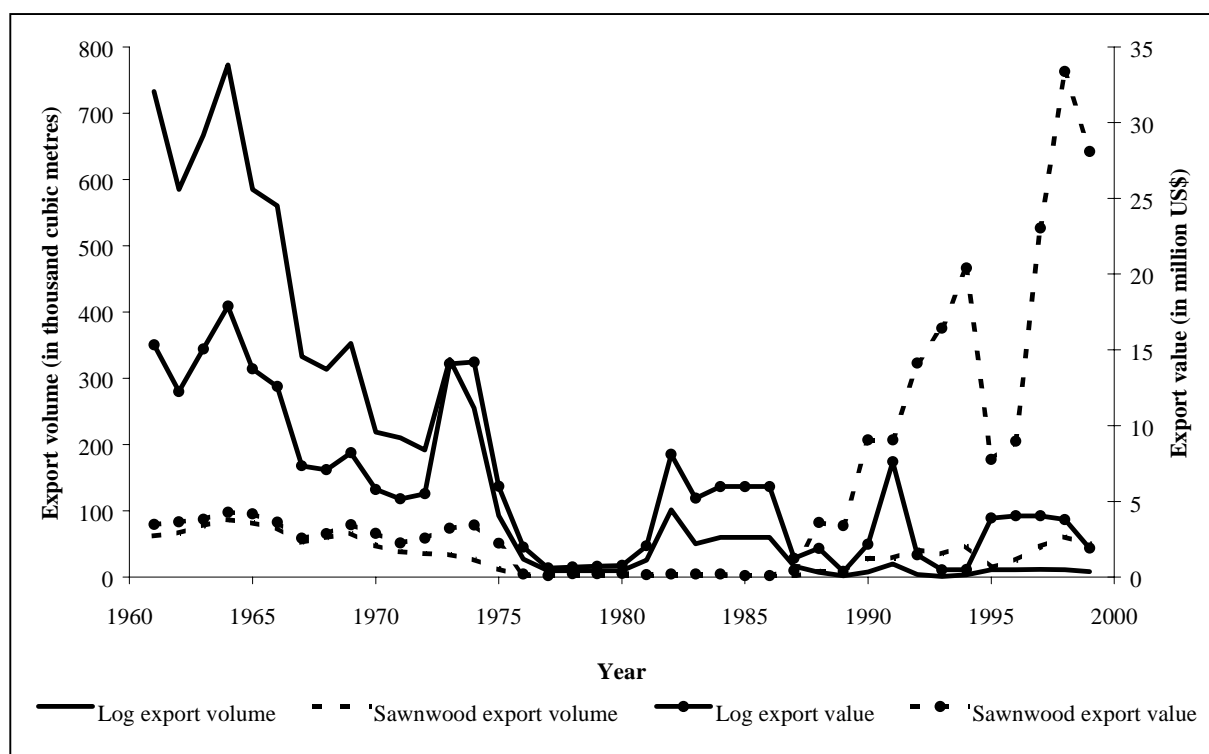
Source: data collected from the field.

The charges levied on domestic trade in non-wood and minor forest products in Taraba State take the form of monthly charges per person to trade in these products. These charges are levied whether these products are exported to other states or not. The charges in 1993 and 2000 are shown in Table 16.

As the table shows, the amount charged to trade in these products has increased by as much as 150 percent for split borassus and palm wine and 400 percent for honey in the last seven years. However, although the charges on most of these products increased in terms of the local currency (Nairas) over the period, they actually fell in terms of US\$. This indicates that there is a need to increase the charges payable on these products in order to reflect their true value and to take into account the drastic fall in the value of the Naira over the last few years.

6.1.3 Charges on international trade

Nigeria has been exporting wood and wood products for a long time, exporting mostly roundwood to countries such as: United Kingdom, United States of America; Germany; Italy; Belgium; Norway; Spain; Niger; Ghana; and Gambia. Trends in exports from Nigeria are shown in Figure 4 below, both in terms of volume and value.

Figure 4 Trends in exports of sawlogs and sawnwood from Nigeria 1961 - 1999

Source: FAO.

Log exports were high during the 1960's, with a peak in exports of 773 thousand cubic metres in 1964, with a value of about US\$ 18 million. By 1970, the forestry sector generated about 2.5 percent of Nigeria's Gross Domestic Product (GDP), with wood and wood product exports accounting for about 1 percent of total foreign exchange earnings (Okorie *et al*, 1981). Adeyolu (1975), suggested that Nigeria ranked second amongst the seven largest tropical wood producing countries in Africa in 1966, in terms of total quantity of logs produced and exported and the proportion of processed wood to log production.

However, the advent of trade in petroleum led to a decline in timber exports over the following years. Umeh (1981) observed that, although production of industrial roundwood had doubled from 1962 to 1971, the value of logs, lumber and plywood exports had fallen from N 13.8 million to N 6.8 million. The value of forest product imports over the same period increased from N 12.4 million to N 31.8 million, implying that Nigeria had become a net importer of forest products.

In 1976, the Government banned the export of unprocessed logs to protect supplies of roundwood to the local market, which was expanding fast because of increases in local purchasing power and an expansion in the construction industry. This led to some reduction in exports as shown in Figure 4.

In 1985, there was a further ban on all wood product exports (whether processed or not), excluding only furniture components and *Gmelina* wood. However, in the early 1990's, there was an upsurge in the extraction and export of Teak. Much of this trade was not properly controlled, so it is difficult to assess the volumes that were extracted and exported with any accuracy.

Export duty on timber is collected by the Customs Department for the Federal Government of Nigeria at the port of shipment. The duty varies according to the species and the Federal Government usually remits half of all such collections to the state where the timber came from. Only the former Western and Mid Western regions benefited from this revenue source.

6.2 Discussion of the variations in forest charges

The variations in forest charges from state to state, as shown in the previous figures and tables, are due to two main reasons.

Firstly, charges differ because forests are managed by the Forest Services of autonomous State Governments (and in some cases Local Governments in the Northern States). Each management authority is free to determine both the level and structure of forest charges and to vary these over time as it sees fit. This results in great differences in forest charges for some species. For example, the stumpage rate for *Mansonia altissima* is set at very different levels in the following states: N 225 in Kogi State; N 500 in Ogun State; N 750 in Ondo State; N 300 in Lagos State; and N 1,000 in Ekiti State. Another example is *Alstonia spp*, for which the following stumpage charges are levied: N 150 in Ogun State; N 200 in Ondo State; N 250 in Lagos State; N 250 in Kogi State; and N 400 in Kwara and Ekiti states.

However, a uniform stumpage rate is applied throughout a given state. This reflects the need for administrative convenience, but fails to account for the fact that variations in physiological factors and transport costs should lead to a geographical variation in the stumpage rate of a species within a state. There is though, some variation according to size within the stumpage charge. For example, *Mansonia* is only harvested at a minimum breast-height girth of 1.5 m in Lagos (where the stumpage charge is N 300), whereas the same species in Ekiti State is harvested at 1.8 m minimum breast-height girth.

There are also some variations in OTV charges due to differences in wood quality. In Osun State for example, charges are based on the class of wood. The first-class woods (which include *Triplochiton*, *Mansonia* and *Azalia spp*) are charged at a rate of N 15 per cubic foot. The second-class woods include: *Pterygota*; *Lophira*; and *Cylicodiscus*, which are charged at the rate of N 10 per cubic foot, while other lesser known species, such as *Celtis spp*, are charged only N 6 per cubic foot.

The second reason for the difference between charges in different states is due to differences in the stand density and, in particular, the density of commercial trees. Thus, the results of forest inventory exercises in recent years generally constitute the parameters upon which the 'unit area charge' is imposed. For example, of the twelve major forest reserves in Ondo State, six (namely: Akure; Oluwa-OA2; Oluwa-OA3; Okeluse; Ipele; and Idoani forest reserves) constitute a zone where concessionaires pay a fee of N 4,000 per hectare. Onishere, Oluwa-A41, Ala, Irele and Ore forest reserves are in another zone, where charges are N 3,200 per hectare. Akure-Ofosu and Idanre-OA5 are in a third zone, where charges are N 4,500 per hectare.

7 ADMINISTRATION OF THE FOREST REVENUE SYSTEM

7.1 *The process of setting forest charges*

There are no clear mechanisms for setting forest charges in many states' Forestry Services in Nigeria. Charges are set administratively with no stated period of review. However, the authority to set charges lies with the State Executive Council, which receives technical advice from the Forestry Departments. According to Skoup (1987), a slight departure from this occurs in the savannah ecosystems in the north, where local governments are given powers for all issues concerning forest revenue.

An example of the legal basis underlying the states forest revenue systems is given in Section 53 of the Forestry Regulations for Bendel State, 1976. An excerpt from these regulations is given in Box 1 below.

Box 1: *An example of the legal basis for setting forest charges in Nigeria*

Section 53 of the Forestry Regulations for Bendel State (1976) contains the following text:

“The Executive Council, on the advice of the appropriate authority, shall compile as soon as may be possible after the date of commencement of these regulations, a table to be known as the forestry tariff, specifying:

- *the fees payable in respect of every forest product;*
- *the fees payable in respect of processing and manufacturing plants used in timber exploitation;*
- *the fees payable in respect of such other matters falling within the general scope of these regulations as the appropriate authority may determine;*
- *the minimum girth of any timber to be exploited by virtue of license granted under these regulations;*

provided that the Executive Council may from time to time vary the fees laid down in the tariff, and provided further that the Forestry Division or a forestry officer acting in that behalf may, in special cases, reduce the minimum girth of timber to be exploited as aforesaid.”

These regulations are now applicable to Edo and Delta states.

For the avoidance of doubt, “*the appropriate authority*” is defined by Section 2 of the Forestry Law as “*the member of Government for the time being charged with the responsibility for the Ministry of Agriculture and Natural Resources*”, i.e. the Commissioner for Agriculture and Natural Resources. However, by August 1993, the Department of Forestry was transferred from the Ministry of Agriculture and Natural Resources to the Governor's Office, with direct responsibility to the Governor of Edo State through the Secretary to the State Government. Similar executive powers are operated in all of the other states.

Forest charges are not regularly updated. State Forestry Departments put a lot of pressure on state governments for regular upward review of charges, but these are often turned down by governments due to pressure from timber merchants, who influence the governments and lobby them to refuse upward reviews.

Unlike in many other businesses, information about forest charges is not publicly available, nor are they reported in the newspapers or other media. All information about forest charges is available only in the divisional forest offices and all merchants dealing in forest produce are very conversant with them. There is little or no consultation on the setting of forest charges.

The powers set out in Forest Laws empowering the executive to set charges are used to enforce the charges. In general, there are no clear formulae used to fix or calculate forest charges and they are not up dated in line with inflationary trends.

7.2 Revenue administration in natural forests

Due to the dual ownership of natural forests (local authorities and state governments), state forest services have the task of and responsibilities for deciding the level and type of logging activities that may be allowed within and outside the forest reserves. They also decide how much forestland should be set aside for other activities, such as: recreation; wildlife preservation; hunting; grazing; and mining. However, these decisions are rarely based on the value of different activities, or even how much wood is readily available. More often than not, they are based on political pressures.

In many states, forest services are forced to aim at revenue targets that are not in tune with either good forest management practices or the interests of the community. Targets are arbitrarily, set since they are usually fixed in relation to the preceding year's performance. When a target cannot be met in one year, it is reduced in the following year and *vice-versa*. For example, in Cross River State, the gross revenue target for 1975/76 was N 698,000, but achievement was only 12.01 percent. The following year therefore, the target was reduced to N 580,000 (Udo, 1982). However, in 1977/78, the target was again raised to N 605,000 and achievement was only 27.4 percent, so the target was again reduced to N 290,000 for 1978/79. In that year, 75.54 percent of the revenue target was achieved, so the target was reviewed upwards again to N 370,500 for 1979/80.

In recent times however, most states in the high forest zone have achieved more than their targets, because of extensive exploitation of Teak plantations. These achievements in Ondo, Ogun, Ekiti, Edo and Oyo states since 1995 might not have actually resulted from administrative ingenuity though, but rather from uncontrolled logging operations caused by arbitrary target setting and an unmitigated drive for revenue generation.

Assigning revenue targets is a common revenue collection strategy in Nigeria. However, this is not a suitable method of dealing with forest production, which differs due to diverse geographical and ecological conditions and variability in maturity or readiness for harvesting.

In the colonial era, the Chief Conservator of Forests (now called Directors of State Forestry Services) had powers to review and publish tariffs. Though the enabling act is still intact, in most states, only Anambra and Enugu states still use this administrative power.

With respect to charges on non-timber and minor forest products and other charges, charges are rarely based on precise measurement and the relative economic value of the products available in each state. The administrative supervisors and revenue staff may claim ignorance about the variety of charges for non-timber forest products and their availability. An example is the attitude of Edo State forestry staff towards charges for possession of a property

hammer, which yields very high revenues in Ondo, Ekiti and Ogun states, but very little revenue in Edo State.

7.3 Collection and monitoring of charges

The methods use to assess forest charges also vary widely in the country. The method adopted is dependent on the product and, to some extent, the ecology of the area. The out-turn volume (OTV) method is common in many of the high forest states, where there are many large commercial trees in the forest. The OTV system allows timber merchants to pay only for the actual volume of wood taken from the forest. This requires the measurement and calculation (by estimation) of the volume of each log that is removed. Based on the estimated volume, the monetary value of each log is calculated in accordance with the approved state tariff.

In Edo and Delta states, the OTV system is gradually being replaced with the unit area charge. This involves the classification of the forest into zones, according to the richness in species composition, stocking, proximity to markets and nature of the terrain. A fixed rate is charged for a classified area or zone. In Oyo State, forest reserves are simply classified into two zones for the purpose of administering the unit area charge. Such classification simply says whether the forest is rich or poor. For the rich forest areas, the charge is N 600 per hectare and for the poor forest areas, the charge is N 200 per hectare. The unit area charge, though based on subjective assessment, appears to have eliminated some of the problems of the OTV method, especially in terms of reducing administrative delays.

In Cross River State and most of the other high forest states, the stumpage fee method is used to assess forest charges. Unlike the OTV system, which covers both trees in forest reserves and outside forest reserve, the stumpage fee method is applied only to trees outside the forest reserve (i.e. in free areas).

Revenue is also generated from charges made on non-timber forest products. In Ogun and Oyo states, licences are issued on annual basis to people plucking leaves and hunting inside forest reserves. The State Forestry Department employs and trains a group of intermediate officers called Forest Guards. They rise through the ranks to attain the position of Chief Rangers. These officers are trained to assess and grade forest products. Members of rural communities recognise these uniformed staff even more than their non-uniformed supervisors, because they are seen often and it is known that they perform tree inspections and the release of logs.

Payments under the unit area charge method have the advantage that payments must be made in advance before the commencement of logging. In contrast, OTV charges are paid in arrears in cash.

As already stated, forest revenue collection in Nigeria is decentralised. Forest revenue is collected by:

1. Treasury Clerks in forestry offices in local government areas and state headquarters; and
2. uniformed forestry officials (Forest Guards and Game Scouts) in the various forest areas.

To gain access to forest products, users have to pay and obtain permits or licenses from forestry offices and use the treasury receipts to gain access to the products in the forest (where they are checked by the forestry officials responsible for the charges). Moreover, Forest Guards also collect revenue from some types of charges and at road blocks mounted to monitor and control log production. Receipts for these charges are issued to users as waybills.

Charges for stumpage, non-wood products and OTV are collected at both the Forestry Service Headquarters and Local Government Area or Zonal Forestry Offices. Charges for the sale of forest produce are collected at the divisional level. Each province has a divisional forest office headed by a Divisional or Provincial Forest Officer, who is responsible for the overall forestry activities in that division.

In most of the states, a revenue bank account is opened and all transactions that deal with revenue are paid into these accounts. Treasury receipts are issued for all charge payments to prove that the merchant has paid for the products and can have access to them. At the end of each year, amounts in receipt book stumps and the actual amount deposited are reconciled and sent to the Forestry Service Headquarters.

Local communities are involved in collection of fees in some states. In Sokoto and Kebbi states, permits for the collection of fuelwood are issued by Districts and village heads for and on behalf of the local governments. These traditional rulers account for revenue generated on monthly basis. Most communities, like those in Edo State, demand for royalties before trees are felled on their farms or around their villages. The revenue from these charges does not go to the government but to the purse of the communities for the purpose of rural developments. In Cross River state, the Ekuri community charges a fee for all the timber taken out of the forest. This method was initiated by a non-governmental organisation (NGO) with the aim of developing and maintaining sustainable forest management. In most states however, governmental staff collect all forest revenues.

Road checks are used to ensure that what is removed is paid for. Patrol teams also check mills, to ensure that logs are properly stamped and paid for before entering the mills. On some routes, road blocks are mounted to check all vehicles carrying logs to ensure that they are legally acquired. Legally produced logs must have a valid stamp on both ends (stamped with the number of the authorising officer) and the official receipts must accompany the logs as they are transported. However, despite all of these checks, there is still a lot of illegal felling in all of the forests in Nigeria.

7.3.1 Centralised and decentralised levels of government in revenue administration

The central organ of government at the national level is the Federal Department of Forestry. The main functions of the department include: formulation of national forest policy; land-use planning; forestry development and environmental management; the promotion and funding of projects of national interest; the co-ordination and monitoring of forest activities arising from internationally funded projects; and institutional development. The Federal Government is only involved in the administration of forest revenue in the eight national parks in the country, where gate fees are paid by tourists and where there is some organised harvesting of over-populated animals.

Management of the natural forests and plantations is the responsibility of the State Forestry Department on behalf of the State Government. The state owns all forest reserves, formulates and implements policy, and manages forestry activities. Local governments have no responsibilities for forest management. State Forestry Departments are organised in such a way that headquarters formulate policies (including revenue generation), co-ordinate field programmes and administrate forestry practices. The State Forestry Department area or divisional offices are responsible for one or more local government areas, where they interpret and implement state policies and co-ordinate field activities.

Various state governments have realised the shortcomings of the current systems of forest revenue administration and have attempted to improve on them. Several new types of forest charges have been introduced to complement allocations made to the forestry sector. These include: the introduction of afforestation funds; the forestry development levy; and forestry trust funds etc. These are laudable programmes, but there is hardly one state that has completely implemented these good intentions.

There is a serious concern about the future for forestry development in the country, but bureaucracy constitutes a major bottleneck that restricts proper planning for better forest management. All revenues have to be paid into state accounts and, as such, become very difficult to retrieve for forestry policies and programmes. Funds that are meant to be reinvested in the sector to improve management of the forest are never forthcoming. By and large, the forestry sector waits endlessly for government's to allocate funds, despite the fact that revenues are generated all the time. As Cnossen (1979) rightly concluded:

“There is widespread pre-occupation with what should be done rather than how to do it; with more dramatic policy changes and refinements rather than with the duller but indispensable mechanics of implementation.”

However, the real problem with revenue administration in the country lies with the different institutional environment of each state in the federation, in which the forest resource is largely seen as a supplier of regular funds into the treasury, rather than as important natural resource that should be developed through investment.

8 REVENUE COLLECTION AND DISTRIBUTION

8.1 Total collection and distribution of forest charges

In 1993, the Federal Government directed all state governments to pay 10 percent of revenues generated into a Forestry Trust Fund for the management of forest resources. This directive has not been implemented by many state governments. In Kano State, for example, no revenue has been generated for over five years. The forestry sector is seen there more as a promotional business than a revenue generating concern. In most states in the North, there is a practice of dual control or ownership of forests. The State Forestry Departments manage the forest estate, while the local government collects the revenue accruable from the exploitation of the forest resource.

The main sources of forest revenue in Nigeria are different in the two broad ecological zones of the wet south and the dry north. The southern states rely on charges on timber harvesting and processing for between 70 - 80 percent of their forest revenues. In particular, charges such as: stumping; OTV; and registration/renewal of sawmills, resaw benches, property hammers and chainsaws, are the major sources of revenue in this zone. The dry states of the North derive a significant proportion of their forest revenues from charges on fuelwood, poles, gum arabic, honey, locust beans and game hunting.

Table 17 Average charges for forest products and services in Nigeria in 2000

Forest product/service	Unit	Average forest charge	
		in Naira	in US\$
Timber			
Unit Area charges	per hectare	200 - 600	1.72 - 5.17
Stumpage	per tree	50 - 420	0.43 - 3.62
OTV Grade 1 species	per cubic foot	94.50	0.84
Grade 2 species	per cubic foot	65.50	0.58
Grade 3 species	per cubic foot	51.70	0.46
Poles	per pole	150 - 180	1.29 - 1.55
Fuelwood	per cubic metre	80	0.69
Non-wood and minor forest products (e.g. ropes, leaves, canes, etc.)	per month	100 - 300	0.86 - 2.59
Forest industry licences			
Bandmill	per unit	10,000	86.21
Benchmill	per unit	5,000	43.10
Circular benchmill	per unit	2,500	21.55
Sawmill	per unit	2,500	21.55
Planing machine	per unit	2,500	21.55
Timber preservation/seasoning	per unit	2,500	21.55
Forest recreation gate fees (e.g. in zoos, botanical gardens)	per person	5 - 10	0.04 - 0.09
Hunting of animals	per animal	20 - 5,000	0.17 - 43.10

Source: data collected from the field.

Table 17 presents the average charges paid for forest products and services in Nigeria in 2000. The table shows ranges of charges for some of the products and services where the range of

charges across states is so variable that an average charge would not be representative. All of these charges vary across states and products, but they vary considerably in some cases.

Table 18 *Total forest revenue collection in selected states in Nigeria 1991 – 1999 (in thousand Naira)*

States	Year								
	1991	1992	1993	1994	1995	1996	1997	1998	1999
Abia	n.a.	219	131	161	395	301	239	379	396
Adamawa	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Akwa Ibom	277	230	204	276	728	346	553	672	890
Anambra	n.a.	159	270	212	287	250	192	379	353
Bauchi	15	21	20	27	5	8	23	5	21
Bayelsa	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	141	117	144
Benue	n.a.	n.a.	n.a.	n.a.	n.a.	369	625	781	1,094
Borno	801	864	1,061	1,118	1,502	1,804	1,991	8,247	2,745
Cross River	2,000	2,000	2,000	8,000	14,000	11,000	14,000	14,000	13,000
Delta	n.a.	1,882	1,756	1,654	1,478	1,539	1,426	966	1,571
Ebonyi	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	71	115	302
Edo	1,819	4,892	5,535	16,007	25,439	11,802	71,481	25,955	30,650
Ekiti	n.a.	n.a.	n.a.	n.a.	n.a.	7,907	20,836	13,009	17,717
Enugu	n.a.	72	74	137	1,555	94	252	214	350
Gombe	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Imo	n.a.	183	422	428	584	520	503	469	632
Jigawa	n.a.	n.a.	n.a.	30	33	27	41	52	47
Kaduna	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Kano	0	0	0	0	0	0	0	0	0
Katsina	36	43	76	98	120	342	336	105	494
Kebbi	n.a.	25	2	3	9	2	93	837	214
Kogi	n.a.	1,500	1,100	4,970	6,560	3,000	6,500	7,540	4,730
Kwara	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Lagos	83	n.a.	n.a.	414	793	1,052	899	806	2,360
Nasarawa	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Niger	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Ogun	n.a.	n.a.	2,177	4,057	9,448	14,684	44,895	34,609	41,329
Ondo	101,016	76,219	72,009	96,441	101,016	76,009	72,009	96,441	86,412
Osun	183	2,008	3,974	5,559	30,071	13,878	52,228	63,218	35,714
Oyo	990	618	1,468	1,880	1,892	12,469	18,823	448	5,011
Plateau	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Rivers	n.a.	n.a.	n.a.	94	258	101	118	109	n.a.
Sokoto	298	332	378	437	463	353	475	568	484
Taraba	9	20	19	22	34	72	208	128	277
Yobe	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Zamfara	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	55	57	n.a.
FCT	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total	107,526	91,288	92,674	142,026	196,670	157,928	309,014	270,228	246,936
(US\$ '000)	(10,851)	(5,277)	(4,203)	(6,488)	(6,226)	(1,929)	(3,760)	(3,125)	(2,572)

Source: data collected from the field.

To summarise, the charges for forest industry licences and timber are the highest of all of the charges, followed by charges on non-wood and minor forest products. The charges for hunting wild animals, particularly large mammals, are also relatively high. The lowest charges are for fuelwood collection and forest recreation. However, the level of charges is not the only factor determining the total level of revenue generation. The amount of illegal

production of forest products is another factor that has a major impact on forest revenue generation.

Table 18 summarises the total government revenue generated from forestry in Nigeria over the last decade. The table shows that there has been a significant improvement in revenue generation, particularly over the last three years (1997 to 1999). The probable reasons for this are:

1. recent increases in the tariff rates;
2. the effect of the creation of new states, which has led to an intensification in forestry activities in some cases (e.g. in Sokoto, Zamfara, Ondo, Ekiti, Oyo and Osun states); and
3. the government's policy on timber exports introduced in 1995.

The average level of forest revenues collected in each state over the period 1991 - 1999 is also displayed on the map shown in Figure 5. As the map shows, the majority of forest revenues in Nigeria are collected in the states in the southwest of the country (Oyo, Osun, Ondo, Ogun, Ekiti, Edo and Kogi) and Cross River State. Each "dot" represents N 250,000 or just over US\$ 2,000 (at the current market exchange rate).

Figure 5 *Average annual revenue collection by state in Nigeria over the period 1991 - 2000*

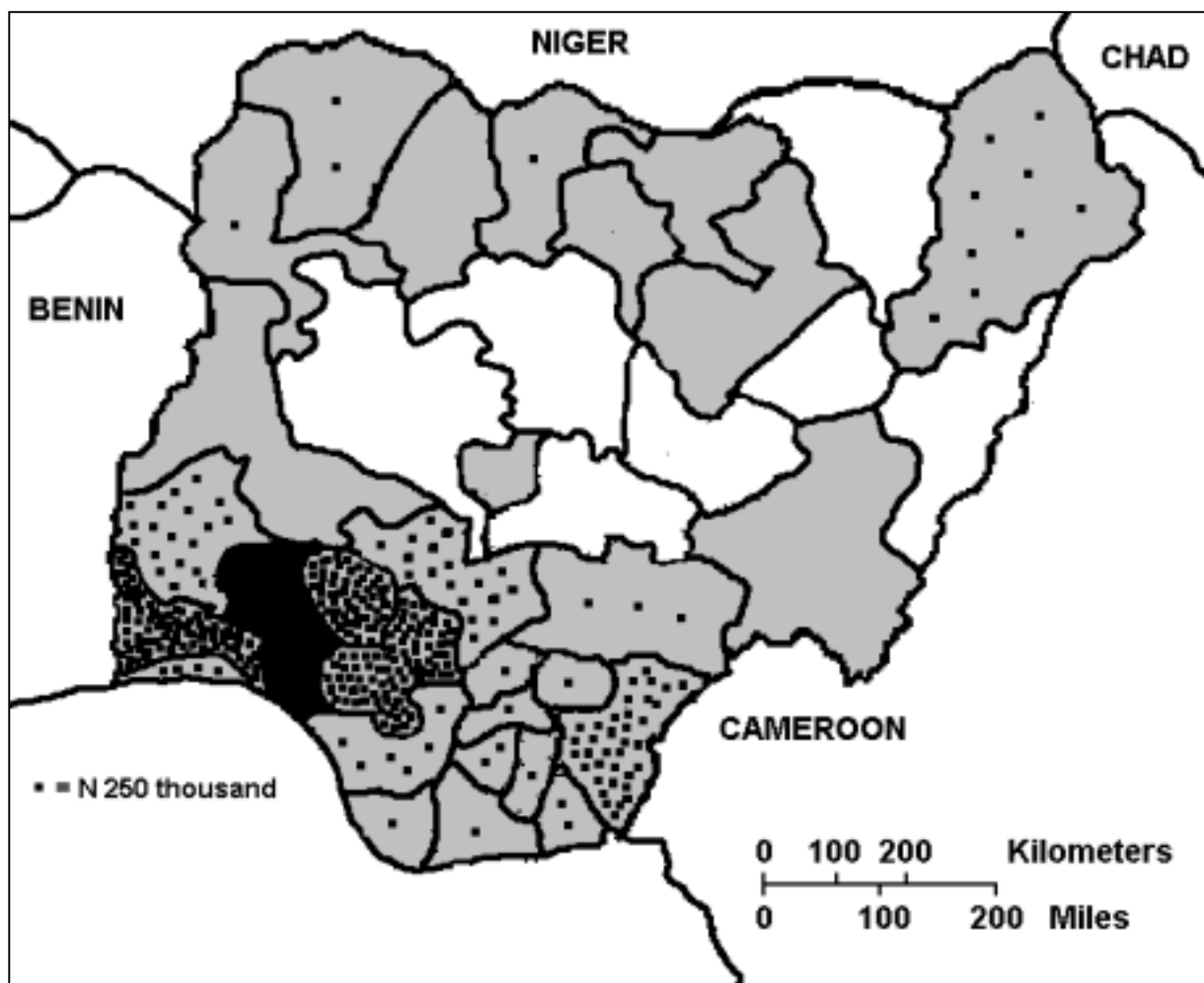


Table 19 shows the sources of forest revenue generation in the country. To summarise, the revenue sources for the forestry sector varies from timber (62.8 percent), through poles (17.69 percent), non-timber and minor forest products (13.17 percent), fuelwood (3.50 percent), forest industry licence fees (2.26 percent), forest recreation fees (0.49 percent), to penalties forest offences (0.09 percent).

The detailed data showed that timber is the main source of revenue in the rainforest states of Ondo, Ogun, Osun, Edo and Ekiti and that these states accounted for a significant proportion of the 63 percent share of revenues from timber in the total. Most of the revenue from poles is derived from plantations of Teak and *Nauclea diderichii*. Although fuelwood is regarded as a minor forest product from the forest, it is a significant source of forest revenues in the savannah areas. Non-timber forest products seem to be less effective sources of forest revenues because of the difficulties of collecting fees on these products and the long duration (3 months) required to harvest some of these products.

Table 19 *The average share of total forest revenues collected from various sources over 1991-1999*

Revenue sources	Share of revenue (in percent)
Timber charges(including charges on sawnwood)	62.80
Pole charges (e.g. for electricity and telephone poles)	17.69
Fuelwood charges	3.50
Charges on non-timber and minor forest products (except fuelwood)	13.17
Penalties for forest offences	0.09
Forest industry licence fees	2.26
Forest recreation fees (e.g. entry fees for zoos and botanical gardens)	0.49
Total	100.00

Source: data collected from the field.

Some states in Nigeria have adopted models of forest revenue sharing between state and local government and forest funds. The different models of forest revenue sharing currently in place in a number of states are shown in Table 20. Each state is independent of the others in terms of policies concerning the forestry sector. However, based on the historical relationships between states, some groups of states have adopted common models of revenue sharing. It should be noted that, although these models are set-out in legislation, they are not strictly in use in many cases.

Table 20 *Models of forest revenue sharing in selected states in Nigeria*

States	Revenue sharing models	
Edo	State Government	55.0%
	Local Government	25.0%
	Forestry Fund	20.0%
Cross River	State Government	80.0%
	Local Communities	20.0%
Ondo and Ekiti	State Government	75.0%
	Forestry Fund	25.0%
Oyo and Osun	State Government	58.3%
	Forestry Fund	25.0%
	Local Government	16.7%
Ogun	State Government	50.0%
	Forestry Fund	25.0%
	Local Communities	25.0%
Kaduna (and some other states in the savannah forest zone)	State Government	40.0%
	Local Communities	60.0%

Source: data collected from the field.

9 GOVERNMENT EXPENDITURE ON FORESTRY

Public funding for forestry development relies entirely on annual allocations from government. The State Departments of Forestry are allocated funds each year to cover salary and wages as well as other operational and overhead costs. The level of funds allocated to forestry across the country is very low. In some states, it is as low as 1 percent of the annual state budget. In the Federal Ministry of Agriculture, sometimes only about 2 - 4 percent of the annual allocation of public funds to the Ministry goes to the Forestry Department.

In recent years, federal and state governments have been unable to meet their financial requirements for forestry development due to the low level of funding. This contrasts to earlier years, when states were able to cope because of assistance from foreign or external loans. Examples of such assistance include: the World Bank Forestry II Project; African Development Bank forestry development programmes; and the EEC/FGN Katsina Afforestation Project. Most of this assistance has either terminated or is about to terminate.

9.1 *Expenditure by the main government forestry institutions*

The Nigerian Government has a number of institutions implementing forestry projects and programmes. Such institutions include: the Federal Department of Forestry; the Forestry Research Institute of Nigeria; the forestry departments of various universities; and various schools of forestry and vocational training centres.

Each of these institutions is charged with specific responsibilities for implementing government forestry policy. For example, the Federal Department of Forestry has the function of consolidating and expanding the forest estate in Nigeria and managing the estate in accordance with the principles of sustainable yield. One of the ways in which these functions are implemented is through specific projects, such as forest plantation development projects and the project on the production of long-fibre wood for the pulp and paper industry. These projects are implemented through the state forestry services, by transferring funds to them through the Department's field offices in the states. Implementation of such projects is often spread over a long period spanning many years and, because some of these projects are currently on line, they are currently funded every year by government.

The Ministry of Finance has the responsibility of preparing the national budget based on the activities of the government in all sectors of the economy. This budget is presented to the National Assembly for approval and, when it is approved, it is presented as an Appropriation Bill by the National Assembly for assent by the President. Thereafter, the budget is allocated and distributed to each of the various ministries and departments, which can then start to spend this money.

Historically, public funding of forestry projects and programmes in Nigeria has been inadequate and untimely at both the level of the Federal Government and state governments. As Table 21 shows, funding has been particularly poor over the last ten years and has reached levels of only between 1 and 8 percent of the total federal budget for agriculture (excluding provisions for fertiliser). This ugly situation has meant that it has not been possible to adequately execute and implement planned programmes in the forestry sector. Hence, this situation has had a detrimental impact on the sustainable management of the forest estate.

Table 21 *Federal budget allocation to the Forestry Department 1991 - 1999 (in Nairas)*

Year	Allocation to the Federal Ministry of Agriculture and Natural Resources	Allocation to the Forestry Department	Allocation to the Forestry Department as a proportion of the total allocation to the Ministry
1991	265,569,690	10,649,240	4.00
1992	305,055,000	12,000,000	2.45
1993	656,891,000	10,966,080	1.67
1994	425,200,000	20,460,000	4.80
1995	1,432,203,218	39,000,000	2.72
1996	1,986,451,500	27,495,000	1.38
1997	3,800,000,000	100,000,000	2.65
1998	N/A	N/A	N/A
1999	828,265,000	66,000,000	7.96

Source: Federal Ministry of Agriculture and Natural Resources (2000).

As stated earlier in the preceding sections, forest revenues come from the production of tangible and intangible forest products. These revenues take the form of tariffs, charges, levies and taxes. However, the existing forest products prices (tariffs) are generally unrealistically low and bear little resemblance to the cost of renewing the forest resource. In addition to this, many of the other goods and services produced in Nigeria's forests are also undervalued (or not valued at all). Thus, the contribution of the forestry sector to the Gross Domestic Product (GDP) is dismally low and appears insignificant when compared with other sectors such as petroleum products.

The establishment of Forestry Trust Funds (FTFs) has not helped matters, because revenues accruing into such funds are never retained and ploughed back into the forestry sector for forestry development as originally intended. Rather, in most cases, state governments have utilised these funds for other purposes (e.g. payment of salaries in the public sector generally and expenditure on other development projects). This was particularly a problem during the era of military rule in Nigeria.

9.2 Foreign assistance to the forestry sector

Forestry development efforts in Nigeria were, at first, geared towards forest reservation. This period was followed by a period of uncontrolled exploitation of timber resources because of high demand for forest products. Considerable pressure was exerted on the forest resource during this period. In addition to forest exploitation, increased population pressure in the countryside also contributed to the already worsening situation, by increasing demand for farmland, leading to further forest depletion. However, since 1970, technical assistance has been received on a number of occasions, with the aim of assisting the country to increase its forest estate and manage the environment in a more sustainable way. Some of these assistance projects are briefly described below:

1. The Food and Agriculture Organization (FAO) and United Nations Development Programme (UNDP) sponsored a large scale indicative forest inventory between

1974 and 1976. This was a success and the report of the project has been a good source of data for forestry development in Nigeria.

2. In the early 1970's, the Finish government and FAO gave a grant to build a sawmill and forest utilisation centre at Benin City in Nigeria.
3. The World Bank financed, through a loan of US\$ 31 million, the "*Forestry I Project*" between 1980 and 1984 in Ogun and Ondo states. The objective of the project was to improve industrial wood production and the project was a huge success.
4. The N 13.56 million Katsina State Afforestation Project (KSAP) was funded by the European Economic Community (ECC), now European Union (EU), between 1987 and 1993. The project did very well in achieving its objectives.
5. Between 1987 and 1996, the World Bank financed the US\$ 71.0 million "*Forestry II Programme*" in Nigeria. The Project was implemented in 16 states in the country. The major objectives were to strengthen the structural base of the sector, stabilise soil conditions in the semi-arid and arid North and increase industrial wood supply. This project was completed on June 30, 1996 and the afforestation component was judged as one of the most successful in the world (receiving the "*Saving the Dryland*" award from the United Nations Environment Programme (UNEP) and the International Fund for Agricultural Development (IFAD)). Broadly speaking, the programme was able to achieve the following:
 - Improved forest policy, mainly in the following areas: forest revenues; integration of fruit trees into farming systems; increased private-sector participation in forestry and wood based industries; and the establishment of Forestry Trust Funds to sustain government financing of forestry project(s).
 - Improvements in planning and policy formulation capability, forest management, extension, monitoring and financial management (as demonstrated by the quality of the project's outputs).
 - Sensitisation of individuals and communities to take responsibility for tree growing and improved forest management. This was achieved through the involvement of over 350,000 farm families in social forestry activities.
 - Improved plantation development and management of about 40,000 hectares of forest plantations.
6. In 1991, Nigeria received a grant of US\$ 690,000 from UNDP, to develop the Nigerian Forestry Action Plan (NFAP).
7. Form 1994 to 1996, FAO provided US\$ 155,000 of technical assistance towards the control of Scale insect infestation on *Neem* trees in Nigeria. The project's objective was to develop an integrated pest management system by introducing natural enemies of the Scale insect, using exotic germplasm for evaluation of tolerance or resistance to breeding by the Oriental Scale insect and establishing a

long-term integrated pest management strategy in Nigeria. Through the project, an Infestation Survey Manual was developed.

8. From 1992 to 1997, the World Bank provided a US\$ 3.5 million loan for the Environmental Management Project. This project was implemented nationwide and, through the use of remote sensing and GIS technology, resulted in the production of up-to-date land-use and vegetation maps for the country, which provided useful information and data for land-use planning.
9. Also, between 1993 and 1998, the International Bank for Reconstruction and Development (IBRD) sponsored, through a grant, an Environmental Management Project, which had forest reserve management as a component. The project component has been successfully concluded.
10. In 1986, the African Development Bank (ADB) made a loan of UA 69.55 million to Nigeria for forest development in Ogun and Ondo states (the Forestry Development Project or FDP). Projects under this loan established more than 6,000 hectares of *Gmelina* plantations to increase the raw material base for the Iwopin Pulp and Paper Mill. Each of the project areas was also expected to establish 600 hectares of trial plots of indigenous species and pine species to supplement the supply of sawn timber, poles and fuelwood from the 50,000+ hectares of existing *Gmelina* plantations in the two states. The projects, which had wood conversion and utilisation as one of their main components, started in 1989 after some delay and were to end in 1992. However, because the projects started late, there was some delay in equipment procurement through international competitive bidding, so the projects are still on-going and have been extended to December 2000.
11. In 1995, the ADB gave a grant of UA 2.717 million to Nigeria for the Forest Resources Study (FRS). Essentially, the Forest Resources Study was to survey the forest resources of Nigeria and produce a database for forest management in the country. The project has been successful. The study also identified priority projects that would assist the country in sustainable natural resources management. Other results of this project included the production of forest resources inventory data for 28 out of the 36 states and the provision of a Forest Information System (FIS) for the country.
12. Recently, a Micro-Watershed and Environmental Management Project has been developed. This is still at the development stage and will depend upon the success of the efforts outlined above. This project, which is multi-sectoral and community-driven, is based on the concept of natural resources management. The project will be financed by both credit from the International Development Association (IDA) and funds from the Global Environmental Facility (GEF). The IDA financed component will focus on community-driven investment and has components for the review of policy and legislation, institutional and capacity building and communications outreach. The GEF component will focus on the management of two national parks and their buffer zones and other areas identified as being of high biodiversity. The project is due for appraisal in February 2001 and is anticipated to cost about US\$ 100 million, of which GEF has approved US 15 million.

Table 22 provides a summary of all of the major donor assisted projects in the forestry sector in Nigeria since 1987.

Table 22 *Major donor assisted projects in the forestry sector in Nigeria 1987-2000*

Funding agency	Amount of assistance	Period covered	States covered	Type of assistance
EEC-FGN (KSAP)	N 13.56 million	1987 - 1993	Katsina	Technical Assistance
IBRD (Forestry II)	US\$ 71 million	1987 - 1996	Bauchi, Borno, Jigawa, Kogi, Kaduna, Kano, Katsina, Ogun, Ondo, Plateau, Sokoto, Yobe and Zamfara	Loan
UNDP (NFAP)	US\$ 690,000	1991 - 1997	Nationwide	Grant
FAO (Neem Disease)	US\$ 155,000	1994 - 1996	North Central, North West and North East.	Grant
IBRD (EMP)	US\$ 3.5 million	1992 - 1997	Nationwide	Credit
ADB (FDP)	UA 69.55 million	1989 - 2000	Ogun and Ondo	Loan
ADB (FRS)	UA 2.717 million	1995 - 1999	28 out of the 36 states	Grant

Source: FDF (1999).

9.3 *Expenditure by other forestry institutions*

The Forestry Research Institute of Nigeria (FRIN) has the sole mandate to undertake research into any forestry related subject in the country. Funding of this agency, which has just been transferred from the Federal Ministry of Agriculture and Natural Resources, is also through the central vote of government (i.e. it is directly funded by the Federal Government of Nigeria). Most often, budget allocations to this agency are grossly inadequate to meet the research needed in the forestry sector. These allocations are supposed to cover the following basic research activities:

1. identification and control of forest pests and diseases;
2. improvement of growth and yield potential of indigenous and exotic tree species;
3. identification of the potential to integrate trees into farming systems and the potential for natural regeneration; and
4. research into specific needs as may be identified by various forestry training institutions.

There are three main categories of forestry training institutions in Nigeria, namely:

1. the professional training institutions (i.e. the university forestry departments);
2. the technical training institutions (i.e. the colleges of forestry and colleges of wildlife management); and
3. the vocational staff training institutes, which train semi-skilled and unskilled forestry personnel.

The above institutions are funded from a mixture of federal and state budget allocations and are also poorly funded. Accurate information about the funding of these research and educational institutions could not be obtained for this country report. However, it should be noted that these institutions have survived for many years and the educational institutions have trained many forestry personnel over the past 50 to 60 years.

9.4 *Grants and subsidies to the forestry sector*

Forest management in Nigeria has been in the hands of the government for over a century. This has resulted in uncontrolled deforestation of the natural forest, encroachment by farmers practising shifting agriculture and desertification at an alarming rate. There are no incentives for stakeholders to invest in sustainable forest management and this has not helped matters. The only private-sector involvement in forestry development is in the forest processing sector (sawmills, wood based panel factories and other wood producers) and activities in this sector are fairly modest and focused on extraction rather than management. Only a few hectares of forest plantations have been established by private firms and individuals.

9.5 *Income and expenditure of state forestry enterprises*

There are the three major pulp and paper producers in Nigeria, namely: Iwopin; Jebba; and Oku-Iboku. These are all government controlled companies that are located in the high forest zone. Unfortunately, these companies have been poorly funded and have been closed down for over four years, due to lack of operational funds. The current administration in Nigeria has begun to plan the privatisation of these companies and details of this are still being worked out.

10 DISCUSSION AND CONCLUSIONS

10.1 *An appraisal of the forest revenue system in Nigeria*

The forest revenue systems used in all of the different states in Nigeria are inefficient because, although they differ widely, they do not accurately reflect the specific characteristics within and amongst each of the states. Overall, the forest revenue systems used are also weak and inefficient because of the following reasons:

1. the systems do not emphasise that production has to be carefully monitored in order for the collection of revenues to be maximised;
2. the systems result in high compliance costs for the forest users, who are expected to visit forest offices to pay charges (resulting in very low numbers of people obtaining permits, especially for non-wood and minor forest products - even though tariff rates are low); by implication, this encouraging illegal activities and low revenue collection; and
3. most of the costs of revenue collection are borne by the forest users and not by the government, such that it is not possible to compare the total costs of revenue collection with the amounts collected.

Because of obvious administrative and management lapses, illegal harvesting of forest products is rampant and it is estimated that more than 90 percent of minor forest product producers and about 40 percent of timber producers avoid payment of forest charges. In view of these circumstances, the forest revenue system is not effective.

For example, the forest monitoring system to control exploitation and transportation of forest products has broken down, because of a lack of patrol vehicles and an inadequate number of staff. Moreover, the uniformed forest staff are not motivated and equipped enough to enforce the laws concerning forest exploitation. Most often, forest products are exploited by rural communities bordering the forests without paying the necessary charges for permits to collect the products.

Another factor that contributes to poor revenue collection is the high overhead costs paid by a forest user. The process of paying forest charges can be tedious and complex. For example, to fell a timber tree under tariff on a private farm, the producer first has to obtain the owner's consent from the land holding community and then from the farmer on whose farm the tree is situated. When the two parties agree that the tree can be felled, the farmer is paid by the producer who then has to obtain a permit from the local forestry office before the tree can be felled.

The tariff rate and the rules regarding payment and harvesting are clear to most members of rural communities. However, in communities who have had their lands reserved or on whose native lands forest resources are being harvested, the collection of forest revenues does not go down well with the people because:

1. the communities feel alienated from their ancestral lands when they are made to pay for God-given resources, which they consider to be theirs;

2. the revenues from forest harvesting are not shared with land holding communities in many states;
3. the money collected as forest revenues is kept by the government and is not usually made available to regenerate and restore the forest resource; and
4. people are not happy to see "aliens" (i.e. those that have no tenural rights to their land) being allowed to exploit their God-given resources, while the land owners have no free access to the same resources themselves.

Forest revenue generation will be more feasible when the tariff rates are realistic and effective revenue generating machinery is put in place. At present, the tariffs on which forest revenues are based do not represent the realities of the market with respect to the supply and demand for forest products and the cost of forest resource production. An example of where the tariffs are too low is in forest plantations. For example, the cost to establish a *Gmelina* plantation in the high forest zone in Nigeria is N 26 per cubic metre,¹ but the states that own the land fix the charge for harvesting the timber at N 22 per cubic metre.

Out-turn volume (OTV) charges range from N 8.40 per cubic metre for lesser known species to N 16.80 per cubic metre for highly valued species, yet the delivered sale prices for roundwood vary from N 185 per cubic metre to over N 268 per cubic metre outside the protected forests. In the areas where the unit area charge system is used, the revenue collected from forest users varies from N 200 per hectare in secondary forests to N 600 per hectare in rich forests. However, the forest user can obtain anything from N 30,000 to N 100,000 for the timber taken from each hectare, even when the timber is sold at the forest gate.

Thus, increasing the charges levied under the various forest revenue systems (i.e. stumpage, OTV and unit area charges) could, with intensive production control and monitoring, improve the forest revenue base. In-built and self-regulatory collection of forest charges, in accordance with the pricing policy for forest products and the supply and demand conditions in each state, could improve forest revenue collection and eliminate the fixing of tariffs through the rule of the thumb. Evasion of charges could be minimised or eliminated, if the fixing of tariff rates, production monitoring, revenue collection and revenue sharing was based on participatory approaches, involving the rural communities that have had their lands reserved or whose forest resources are used as sources of revenue by government.

10.2 Impact of the forest revenue system on sustainable forest management

Within the forest revenue and licensing systems employed in Nigeria, the measures intended to promote sustainable forest management include the following:

1. the payment of royalty fees to land owners;
2. the requirement that seedlings must be planted for every tree felled;
3. the prohibition of re-entry to concession areas after harvesting;

¹ This figure is based on the production cost in a government owned pulpwood plantation, managed under a 10 year rotation period.

4. the use of girth limits for trees felled;
5. rapid commencement of timber harvesting when forest areas are approved for harvesting (i.e. operations should not be delayed for administrative reasons);
6. the prohibition of killing pregnant and infant animals and removal of caramel eggs; and
7. the use of pass hammers (giving serial numbers to logs) to monitor control and ensure that harvesting rules have been followed.

However, because charges are far below the market values of forest products, the revenue system has unfortunately become counter effective. It has encouraged the number of professional forest contractors to increase dramatically, because of the huge incomes that can be generated from the forestry sector. Thus, because the tariffs are below realistic price levels, they have encouraged forest harvesting to expand beyond the level of sustainable yield.

The problem of the forest revenue system in Nigeria is basically one of market failure. The setting and collection of forest revenues is determined by the government and is not based on the interaction of supply and demand. Thus, because the market is not used to fix suitable tariff rates, the charges on forest harvesting do not result in prices that would equilibrate wood product demand with the sustainable level of supply.

Another problem concerns the sharing of forest revenues. In theory, government is supposed to share a percentage of revenues collected from outside forest reserves with local communities (25 - 40 percent in the savannah areas and 30 - 35 percent in the main forest areas). However, in practice, forest revenues are not shared with stakeholders.

Also, in most states, forest revenues are not administered through an independent Forestry Commission, but are paid into the state's consolidated revenue fund. This money is not usually made available to the forestry sector for forestry management and development.

The fact that there is no uniform forest revenue system in the country may also be a problem. For example, because the tariff rates for forest products vary so much across the country, there may not be an equitable distribution of taxes and subsidies to the forestry sector across the country.

With the current rates of forest tariffs and levels of forest revenue generation, it is doubtful if the forest revenue system contributes positively to the sustainable management of forests in Nigeria. The two main impacts of the forest revenue system on forest management are over-harvesting of the forest resource and poor co-operation between the forest services and rural communities, who are neglected in revenue collection, monitoring and benefit sharing activities.

In order to ensure the co-operation of rural communities in forest revenue generation, rural communities should take part in fixing the tariffs, collecting revenues and revenue sharing. Furthermore, the major forest users should be made to invest in forest management and regeneration, in addition to the fees that they pay to harvest the resource. Finally, all

stakeholders should be encouraged to actively participate in all aspects of forest management and the issue of forestry development should not be seen solely as a government enterprise.

10.3 Government expenditure in forest management

As already noted, forest management in Nigeria is the responsibility of the state governments and the Federal Capital Territory Authority. The role of the Federal Government is mainly to co-ordinate policy and manage the flow of certain funds to the state forestry services. Unfortunately, the allocation of capital to the sector from state budgets in the past ten years has varied from zero to less than two percent of the total budget for capital in the agricultural sector.

An analysis of budget proposals for capital expenditure on forest management in the Federal Government and state governments over the last ten years is presented in Table 23. Although the figures in the table do not give information about actual government capital expenditure on forestry management, they show the anticipated level of capital expenditure that would be required to achieve sustainable forest management in the sector.

Table 23 *Indicative budget proposals for capital investment in the forestry sector in Nigeria over the period 1990 - 2000*

Forestry activities	Total proposed budget	
	(in N million)	(in percent)
Afforestation	1,002	47.6
Wildlife management	424	20.2
<i>In-situ</i> conservation of forest resources and protection	404	19.2
Capacity building	210	10.0
Research	63	3.0
Total	2,103	100.0

Sources: FDF (1995 and 1999).

With respect to sustainable forest management, the primary concern of the government is to restore and rehabilitate the forests that have been degraded through agricultural development, over-harvesting of forest resources and infrastructural development. The government is aware that, unless the forest resource is sustained, most of Nigeria's forest reserves may end up as "paper parks". Thus, the major occupation of the forest service is afforestation and this accounts for the bulk (47.6 percent) of the proposed expenditure.

Wildlife management accounts for about 20.2 percent of proposed capital expenditure. These funds are used for the development and maintenance of *ex-situ* conservation areas (e.g. zoological gardens and rescue centres) and for protection. *In-situ* conservation accounts for 10.2 percent of the proposed expenditure and would cover the protection of the forest estate and management and planning in forest reserves. Further capacity building accounts for 10 percent of the proposed expenditure.

Research accounts for the lowest share of the proposed capital budget (3 percent). Basically, forest research in Nigeria is carried out at two levels. The first is at the Forestry Research Institute of Nigeria, which is responsible for carrying out research into the sustainable development of the forest resource. The second is research carried out at the tertiary education

institutions (i.e. polytechnics and universities) in Nigeria. Unfortunately, the very low levels of funding for the forestry sector in Nigeria means that the results coming from these research institutions are mostly irrelevant under current forest management conditions.

The main financing problems faced by the various government institutions responsible for forest management are as follows:

1. The lack of awareness of politicians and decision-makers on the role of forestry in national development. For the determination and allocation of funds to the sector, forestry is usually compared with agriculture on the basis of the sector's contribution to GDP. Unfortunately however, most outputs from forests (e.g. non-timber products) are excluded from these calculations, which gives the appearance that the forestry sector is insignificant in the economy.
2. Under-funding and late or non-release of agreed budgetary allocations to the sector.
3. A lack of support from the private-sector. Forest management is largely regarded as a government concern and hence it does not attract development funds from the private-sector.
4. A lack of political will on the part of the government to support forestry development in the country more generally.

Government expenditure on forest management may be improved by carrying out the following activities:

1. Forest managers should be actively involved in inter-sectoral matters that affect forestry development. For example, when forestry is recognised as a significant contributor to domestic energy supply in the country, the forestry sub-sector might be considered along with the petroleum sector when the funding of energy programmes is being determined.
2. Forest managers should create awareness among the legislators, members of the executive arms of government and the public to improve their understanding of the role of forestry in the stability of the environment and the socio-economic wellbeing of the people.
3. The major users of forest products should be encouraged to invest in forest management.
4. The government should continue to attract foreign aid for specific areas of forest management. The grants and loans already made for forestry development have had a substantial positive impact in forestry development in the areas of wildlife conservation, capacity building and development of forest infrastructures.
5. The revenues generated from the forest should be made available for forest management.

10.4 The effects of other fiscal policies on sustainable forest management

The other fiscal policies that affect sustainable forest management have been characterised by frequent changes and instability. Very few of the policy frameworks and strategies that have been set out to achieve policy objectives, have been based on the fundamental values and goals of Nigerian society or have been generally accepted by the population. Past policies that have had effects on the forestry sector have largely been the result of unstable governments over the last three decades.

The frequent revisions to fiscal policies that have taken place in the past, have been largely due to changes in government and most of these changes have not favoured the forestry sector. For example, between 1973 and 1985, fiscal policies were characterised by a fairly stable and high rate of expansion in expenditure on the agricultural sector. But, between 1986 and 1988, a structural adjustment programme resulted in a tight fiscal policy, aimed at reducing budgetary deficits and redirecting capital expenditure and credit to agriculture, rural development and manufacturing. By the period 1989 - 1992, the fiscal discipline started to break down and huge deficits started to accumulate at an increasing rate. These fluctuations in policy have exerted varying degrees of pressure on the forestry sector.

The major areas where fiscal policies in other sectors affect the forestry sector are as follows: food security; domestic energy supply; housing; trade; and industrial development. Policies in each of these areas have had a varied impact on the sustainability of forestry management.

10.4.1 Fiscal policies to support food security

A major impact of fiscal policies to support food security has been the impact of high food prices and land extensive cultivation on the forest resource. By implication, high food prices have made rural communities over-dependent on natural forests for sustenance. Firstly, in rural communities that are economically dependent on forest, individuals have intensified their forest harvesting activities, particularly in the area of minor forest products, in order to raise their income levels. Secondly, the poor who cannot afford livestock have been virtually forced to hunt and fish within the forest estates for animal protein supply. Thirdly, the expansion of poor harvesting practices of non-wood forest products for food has been detrimental to biodiversity conservation.

The sudden increase in food prices had also given smallholder farmers an incentive to expand their farms. Because over 95 percent of food supply in the country comes from smallholder farmers, the expansion of smallholder farming using traditional methods (i.e. shifting cultivation) has been detrimental to the natural forest. For example, the total land devoted to agriculture rose from 8.9 million hectares in 1957, through 9.1 million hectares in 1960, 21.8 million hectares in 1970, to about 59.9 million hectares in 1995 (Federal Office of Statistics (1972), updated with more recent information).

Because of the expanding land area devoted to agricultural production, about 2.4 percent of the designated forest reserves in the country has been lost. Yet the demand for forest products in the country has been on the increase and the supply of forest products remains lower than demand. A large proportion of community forests devoted to cultural festivals (such as sacred groves) and a majority of *in-situ* conservation sites outside government forest reserves, have been deforested because of high food prices. The Agricultural Development Project and

National Agricultural Development Authority also support the production of food through land extensive methods.

10.4.2 Fiscal policies in the energy sector

The efforts of government to integrate fuelwood supply into the energy sector have also been a major cause of forest degradation and biodiversity loss. Nigeria is heavily dependent on wood for domestic energy supply in the country, because the traditional source of household energy is wood. Fuelwood accounts for about 80 percent of domestic energy consumption, involving over 109 million cubic meters of wood consumption per year (Cleaver and Schreiber, 1994).

The main substitute for fuelwood in both the urban and rural areas is kerosene. However, the unstable and high price of kerosene, combined with poor distribution and local shortages, have made the cost of kerosene beyond the reach of the poor in the country. The consequence of this has been an increasing dependence on the natural forest for domestic energy supply. The high rate of logging for fuelwood supply contributes to environmental degradation, soil erosion, desertification and increased loss of biodiversity and natural habitats within the constituted government reserves.

The improved integration of fuelwood supply into the energy sector could ensure that extensive production of fuelwood from forest plantations would meet domestic energy needs in rural areas without increasing pressure on the natural forest.

10.4.3 Fiscal policies in the housing sector

The Government of Nigeria has a policy of providing houses for all by the year 2005. This has encouraged the over-harvesting of forests to satisfy the demands of the housing sector for land and forest products. Because the housing sector meets 98 percent of its wood requirements (e.g. roofing, frames, shutters and furniture, etc) from domestic forest resources, wood removals above the annual allowable cut have overturned many forest management plans in terms of their proposals for regeneration and protection.

10.4.4 Trade and industrial policies

Government policy on trade in forest products in Nigeria has been unstable since the 1980's. In 1985, the government banned the export of roundwood, but the ban was relaxed in 1986. In 1995, there was a high demand for Teak poles in international markets and the high income such exports could generate led to massive exploitation of the Teak plantations in the country by timber contractors.

The environmental implications of the high level of Teak exports led the government to tighten the ban on exports again in 1997. However, the reintroduction of the ban led to the dumping (in the sea) of high priced teak timber that had already been cut. Because the timber charges were lower than the cost of production in forest plantations and the revenues generated were anyway paid into states' consolidated accounts, the export trade in timber was not beneficial to the forestry sector.

The desire of government to improve the standard of living among the population has led to the development of transport infrastructure and the promotion of industrial growth. These policies translate into the construction of new roads, the expansion of existing roads and the establishment of industries to provide employment for the growing population. These activities have increased the demand for land, with detrimental consequences for forest management.

10.4.5 Environmental policies

The establishment of eight national parks in the country (Old Oyo, Yankari, Chad Basin, Kainji Lake, Cross River, Gashaka-Gumti, Okomu and Kamuku) has resulted in increased funding from government to support sustainable forest management outside of the forestry sector. For example, the capital budget released to the national parks between 1992 and 1999 was about 60 percent higher than the amount of money released for other forestry projects over the same period.

The establishment of the Federal Ministry of Environment has also widened the scope of sustainable forest management. For example, three Departments (Forestry; Environmental Conservation; and Drought and Desertification Amelioration) now collectively address issues of forest regeneration, biodiversity conservation and soil conservation, which are all relevant to sustainable forest management. Thus, in addition to specific government activities in the forestry sector, more funds are now released to the sector through the activities of other parts of government.

10.5 Attitude to change

10.5.1 General policy and institutional arrangements

Because of the high rate of desert encroachment in semi-arid areas, the menace of soil erosion, deforestation throughout the country, the problem of environmental pollution and the gradual loss of biodiversity, the President of Nigeria directed the Federal Department of Forestry to urgently embark on an aggressive programme of environmental rehabilitation to combat these processes. This directive, issued in 1999, stated that forest development initiatives should focus on the following:

1. the development of forestry schemes for each ecological zone;
2. the establishment of forest reserves in every Local Government Area in the country;
3. the establishment of a scheme for dryland farm development and management for forest and wildlife conservation; and
4. a comprehensive review of the national forest policy.

The establishment of the Federal Ministry of Environment, with three technical departments responsible for environmental issues (such as desertification, environmental degradation,

forest management and conservation) reflects the Federal Government's commitment to the forestry sector. The new focus of forestry management has been to review the national forestry policy, introduce national legislation for forestry and wildlife, review state forestry legislation, develop and upgrade forestry management skills, develop forestry research, train and re-train forestry workers and upgrade national forestry resources and support centres.

The present administration has deep concern for forestry development. The support to the sector ranks high in priority rating. The main concern of government is to sustain the environment through afforestation programmes, in order to control desert encroachment, soil erosion and for forests to continue to provide goods and services to the economy.

10.5.2 Inter-sectoral issues

However, the government seems to prefer to prescribe solutions to forestry problems without finding out the causes of the problems. Thus, the actions of the government are not based on a participatory approach and seem to gloss-over some of the fundamental problems inhibiting the growth of the sector.

The solutions to many of the problems in the forestry sector in the country lie outside the scope of forestry policy. For example, even if all of the present land under government reservation was to be put into intensive plantation forestry, the yields in terms of wood and non-wood forest products would not sustain the growing population. Thus, the solution to this problem is first for the government to establish new forest reserves and rehabilitate the old ones. The mandate to put 25 percent of the total land area in Nigeria into forest reservations is crucial in this respect. Secondly, forestry development must extend forestry programme activities outside the boundaries of the forest reserves. The introduction of tree growing onto farms is important to increase the resource base for the production of wood and non-wood forest products and to increase the habitat for small animals (birds, rodents and reptiles).

Another area that the government should look into is the growing human population that relies on forests for subsistence. What is needed is for government to introduce, through policy reform, programmes that will reduce the pressure on forests for the supply of goods and services. Such programmes should provide alternative supplies of domestic energy to the population and ensure unimpaired access to and improved distribution of kerosene at affordable prices to rural and urban communities. Government should be ready to create awareness among the people to accept and adopt land-use changes that would de-emphasise their current reliance on forests.

Agriculture is the largest land-use in Nigeria, accounting for about 59.9 million hectares or 64 percent of the total land area of the country. Thus, agriculture is the main threat to forestry development in the country. However, it is doubtful whether Nigeria needs 59.9 million hectares of agricultural land to feed about 120 million people. If agricultural production is not intensified at a rate that exceeds population growth, it will not be possible to discourage further invasion of forest reserves in the country and Nigeria will face food insecurity even if all the remaining land in Nigeria is used for agriculture (Cleaver and Schreiber, 1994).

In order for the forestry sector to move forward, the government should carry out a policy review of the sector, including a review of the other sectors that have an effect on forestry

development. The recent production of a draft copy of a national forestry act (for consideration by the National Assembly) may influence the government's attitude when it is passed into law and efficiently implemented. However, the state forestry services, which are largely responsible for forestry development, seem to be unable to apprehend how the economic, social and environmental performance of the sector can be improved. The legacy of military rule from 1979 to 1999, which considered that forests were a self regenerating resource where goods and services could be exploited without any re-investment, seems to linger on. However, the government is trying to improve upon this situation.

10.5.3 Implementing change within a decentralised system

The role of the Federal Government in forestry development is largely advisory. The level of forest charges, which have not reflected prevailing economic conditions for many years, may remain low for some time, because each state exercises its prerogative to control its own forest revenue system. Revising the forest revenue system in the northern states is also difficult, because of the statutory involvement of local governments in the administration and collection of forest revenues.

The state governments have been unable to meet the financial requirements of the sector and this has resulted in the low level of activities in all states, except for those that have had externally funded projects. The motivation of staff in the state forestry services is low, there is no supply of field equipment and protective clothing and allowances are not paid.

The existing forest policy also needs to be revised to involve communities in management decisions, sharing of revenue from natural forests, private forestry development and the regulation of tree harvesting in forest reserves. As part of this process, forestry policy should consider the historical tenure rights of communities in forest areas, when considering forest utilisation and models of benefit sharing.

10.5.4 Changes to the revenue system

There is a high level of heterogeneity within the forest revenue system within and among the states. The forest revenue system should be revised to improve the revenue base. However a discriminatory pricing policy should be introduced to protect the poor that depend on non-wood forest products for subsistence and to protect severely threatened timber species (Federal Department of Forestry, 1995). Stumpage fees and OTV charges should more accurately reflect the market prices of roundwood and unit area charges should be based on the stocking and land area involved.

The stakeholders in terms of forest revenue are the government (the state and the local government) and the rural communities from whose traditional lands the revenues are generated. The revenue that is distributed to local government is based on the revenue sharing formula that is applied at the state level. This varies from 20 percent in the rainforest zone to 40 percent in the savannah areas. The distribution of revenues amongst rural communities varies from 20 - 25 percent. The adequacy of existing revenue sharing formulae can only be determined when stakeholders participate fully in decision making.

Forest products in the country are grossly under priced in the domestic market. This is encouraged by the high variability of forest charges, which is rooted in the independence of each state to fix its own forest tariffs. Hence, there is a great variation between what forest users pay for the same quantity and quality of forest products in different states, even when they share a common boundary. The price of timber in the market bears no relationship to forest charges or the cost of regenerating the forest (Federal Department of Forestry, 1995). Attempts to encourage tree planting are not effective under these conditions. Therefore, a suitable policy for setting forest tariffs should be developed to ensure the sustainable use of forest products in the long-run. In the short-run, the best that could be done is to carry out a public awareness campaign, to educate people about the consequences of unrealistically low forest taxes (i.e. deforestation and land degradation).

Because the majority of forest products supplied to the domestic market are produced without the payment of any charges (i.e. rampant illegal production), domestic market prices do not reflect the true value of these forest products, let alone the broader environmental and social costs and benefits associated with their production. This situation results in waste and inefficiency in production and consumption and discourages private entrepreneurs to grow trees for their own needs and for the market. Thus, the vast difference in revenue systems between the states and contradictory forest regulations results in almost no flow of investment capital into the sector. Some suggested solutions to this problem are as follows:

1. government should relax all forms of wood export restrictions;
2. forest revenue systems should be revised, based on a national forest revenue study, comprehensive guidelines for forest management and a comprehensive database of forest establishment and management costs; and
3. government should involve all stakeholders in forest revenue system formulation, revenue collection and revenue sharing.

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