

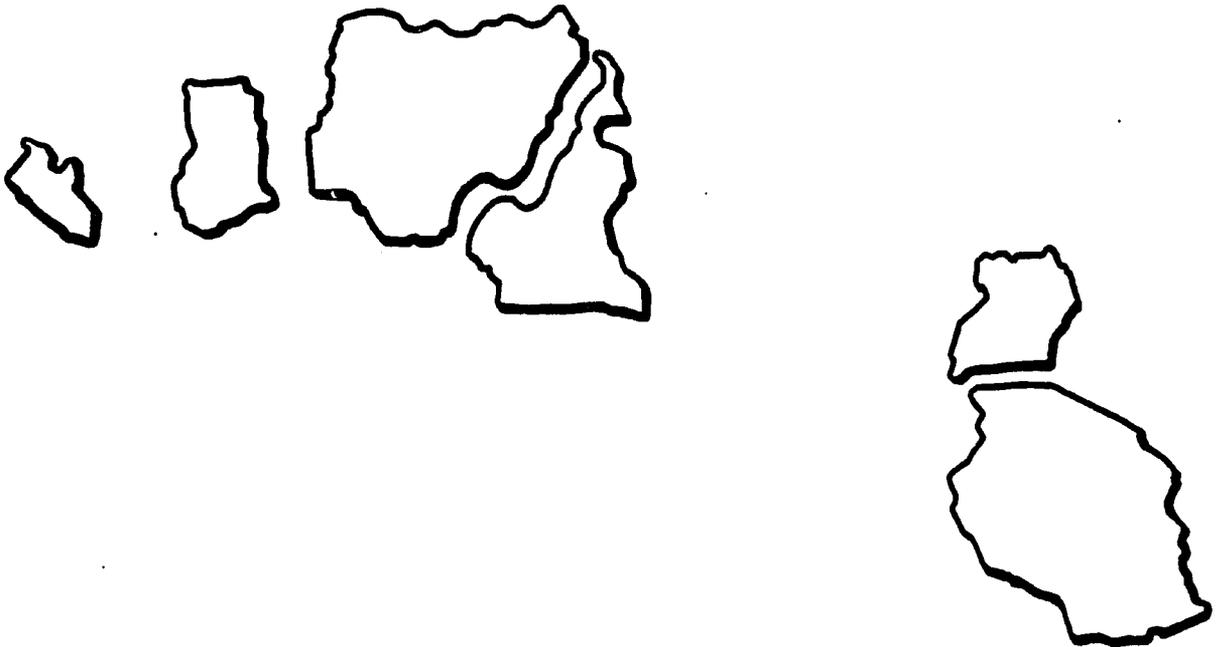
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FORESTRY ADMINISTRATION PROBLEMS IN SELECTED AFRICAN COUNTRIES



FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

ABSTRACT

The study reviews the historical development of public forest administrations in six selected African countries and examines their present institutional base and organizational structure as agencies for forest resources management. It describes aspects related to the legal framework, national forest policies, administrative responsibilities, staffing patterns and forest finance, and examines major problems which limit at present the operational capacity of national forest services.

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FOREWORD

An adequate institutional base and a well-structured, efficient administration are indispensable prerequisites for a balanced development of the forestry sector if the latter is to make a full contribution to the nation's economy. They are also essential in channelling national and international investments to this sector. In recognition of this, numerous Public Forest Administrations in developing countries are showing considerable dynamism in self-improvement. It is believed that a comparison of their situations and of their efforts towards improvement may prove useful to persons working in responsible administrative, advisory and educational capacities. For this reason, the Forestry Department of FAO has been conducting since 1974 comparative studies of Public Forest Administrations in selected developing countries with the full participation of the countries concerned.

This study examines the situation of national forest services in six African States and their capabilities as active resource management agencies. It was prepared by Dr. S. Kolade Adeyoju, Senior Lecturer in Forest Policy and Administration at the Department of Forest Resources Management of the University of Ibadan, Nigeria. Dr. Adeyoju visited the countries under review in 1975.

The study is part of the activities under the present work programme of the Forestry Department of FAO for strengthening the Public Forest Administrations in the African region in accordance with the views of the African Forestry Commission. It has had the financial support of the Swedish International Development Authority (SIDA) under the project "Studies on Forestry Administrations - Africa" (TF RAF 97 SWE).

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Director
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INTRODUCTION

The genuine and continuing aspiration of developing countries is to accelerate the use of their national resources with the aim to improve the welfare of their citizens and to narrow rapidly the gap between themselves and the industrialized countries. The strategy for achieving this aim is to get all economic sectors adequately involved and to develop the available resource potentials in an efficient manner. At the national level, the formulation and attainment of forestry development goals are assured by a set of institutional tools, of which the central coordinating body is usually the national forest service. Since political independence, the relatively inexperienced public services of the developing countries have had to shoulder administrative burdens and responsibilities often far greater in scope and more critical in importance than those of their more experienced counterparts in developed countries. There are, therefore, new and increasing interests in the relationship between the levels of public administration and socio-economic development. In recent years it has been realized that public administration is a pivotal part of development, and that economic underdevelopment is inseparable from weak and inadequate government institutions.

Development is a continuing process of fundamental change. Because government has to initiate and bring about much of this change, the necessary systematic development efforts impose an additional burden upon existing administrative machinery and on personnel that in the past - for example, in the case of the Forestry Department - primarily performed the functions of biological experts, forest conservationists, and collectors of revenues. The new economic development has not been matched by appropriate institutional inputs; the sectoral development projects are continually forced into an unrealistic civil service strait-jacket.

This study is partly a historical and partly an analytical survey of forest administrations in Cameroon, Ghana, Kenya, Liberia, Nigeria and Tanzania. In the first chapter of the study, attention is focussed on the evolutionary stages of development and on various factors affecting the nature and purpose of forest services. Thereafter, the resources at the disposal of the forest services are analysed, while the effects of political and social changes on the supply of much needed resources and on the growth of these services are also examined. The last part of the study is devoted to a discussion of the major problems and feasible ways and means of improving the institutional strength of the forest services. The underlying approach to the study has thus been to assemble information on the principal characteristics of the forest services concerned in order to provide answers to the questions: What are the fundamental difficulties and shortcomings of forest services, and what potentials do forest services possess for improving their performance?

There are no clear-cut or simple replies to these questions. The situation in each country is largely dependent upon its political and educational history, and in particular on the extent of government involvement in the forestry sector. Nevertheless, attempts have been made to identify some causes of persistent difficulties; suggestions have also been made on how to improve forestry's claim to better resources in the increasingly complex national economies. There may well be merit in assessing the value of these ideas with reference to the conditions prevailing in each country.

The material for this study was collected during a field trip from July to September 1975 to the six countries under review. Grateful acknowledgement is made by the author to all chiefs of forest services in these countries for their cooperation, frankness, and excellent assistance, without which it would not have been possible to accomplish this task.

CHAPTER I

FROM COLONIAL RULE TO INDIGENOUS DECISION-MAKING

THE EARLY BEGINNINGS OF FORESTRY

Most of the poor countries of the world have experienced colonial rule at some time. Many, including some major States with large populations, have become independent comparatively recently; in Africa there was a rush to independence around 1960 - generally known as "the year of Africa". Only Liberia has been an independent country since the 19th century, while Ethiopia has never been colonized, apart from the short-lived Italian rule before and during the Second World War. The expansion of European empires to tropical countries was primarily based on commercial interests. Yet, for a long time the continent resisted European in-roads, and as late as 1876 only 10% of the continent was under European administration. The "scramble for Africa" took place after 1870; the spheres of influence between the Governments of Belgium, Great Britain, France and Germany were not settled until the late 1880's, and actual administration in some of the remoter areas did not become a reality until after the First World War. The salient feature of the colonial society was that most, if not all, of the institutions of modern life were first initiated and then controlled by foreigners, and predominantly by Europeans. Although this situation has now come to an end, the awareness of the colonial past is an important factor in a study of institutional and administrative issues.

Forestry had an informal but firm economic start well before the imperial partition of the continent. For instance, a log-importing firm, Messrs. Edward Chaloner & Co. of Liverpool, reported on 6 February 1823 that 300 c.ft. of African oak (now known as Iroko) had been received in the preceding year. The demand was principally for shipbuilding and canal piling. It is evident that African oak was imported from the west coast of Africa long before African mahogany was exploited commercially. No doubt, during the great shipbuilding programme of the first decade of the 19th century, the British Admiralty was continually searching for new sources of timber that might be suitable for use in the dockyards (Latham, 1957).

The introduction of colonial rule in the African countries did not necessarily lead to the establishment of resource agencies. However, when the activities of the entrepreneurs appeared to be flourishing, when there was a rush of newcomers to the business, and when it became expedient to regulate their activities for both conservation and taxation in order to create an economic base, the administration had to intervene. But its intervention was slow and needed the consent of the firms which had charters to acquire licences and concessions in forests predating the political administration. There were many firms operating in each country; each firm had agreements with the local chiefs, particularly in the riverine areas where logs could be rafted to the ports. Quite frequently, the firms had a better knowledge of the country than the political administrators. There were four companies exploiting timber in the former Protectorate of Southern Nigeria, thereby causing a rapid growth in the African mahogany trade between 1894 and 1900. In Ghana, the activities of the timber operators before the end of the 19th century were on a small scale. The first shipments of mahogany occurred in 1880; they were of poorer quality than in Nigeria and it was difficult to dispose of Ghanaian timber parcels at Liverpool (Latham, 1957).

The British Government was originally not too keen on establishing colonial interests in East Africa (Logie and Dyson, 1962). However, through the influential Imperial British East Africa Company, which obtained a Royal Charter in 1888, the Government of Great Britain secured concessions from the Sultan of Zanzibar to administer part of his sultanate on the mainland. An important objective of the British involvement in Kenyan affairs at that time was to counteract the efforts of the much busier Germans in the south of Tanzania (Tanga-

nyika). Similarly, the British Government was forced to accept the direct administration of Uganda, which had been placed in the British "sphere of influence" by the Anglo-German Agreement of 1890, but which the British East Africa Company declared it could no longer administer. Because of continuous pressure from that Company, Lord Lugard in Uganda, and powerful missionary circles, the British Government accepted surrender of the Company's charter and declared a Protectorate over the whole area between Uganda and the sea. The name chosen for the territory was British East Africa.

There were territorial changes before and after the First World War. In 1902, the eastern province of Uganda was added to British East Africa and, shortly after the 1914-18 World War, Jubaland was transferred to Italian Somalia. In 1920, the country, with the exception of the coastal strip, became Kenya Colony. The first major task undertaken by the British Government on its assumption of direct control in 1895 was the construction of the railway from Mombasa to Lake Victoria. The need to ensure large supplies of fuel for the wood-burning locomotives led to the establishment of the first up-country forest reservation and to the first plantations of eucalypts for fuel.

Originally colonized by the Germans and known as German East Africa, Tanzania had a forestry history dating from 1897. A succession of German foresters established forest reserves, made working plans, planted local and exotic species, and published a game ordinance. At the end of the last century, forestry activities in Tanzania had proceeded beyond the state of a free-for-all enterprise and Tanzania was ahead of most other countries on the continent. It is worth noting that the early efforts of the Germans provided guidance and a springboard for the later activities of British foresters.

In the Cameroons, the early commercial forest exploitations concentrated mainly on ebony logs, and in 1912 the forest service, established by the colonial German administration, introduced specific provisions in the prevailing timber harvesting concessions, which stipulated the improvement of logging and extraction techniques, the enforcement of minimum cutting diameters, and the execution of certain silvicultural operations by the concessionnaires (Hedin, 1930). After the First World War, the French colonial administration encouraged the expansion of logging activities to new forest zones along the railway Douala - Yaoundé, and in 1928 log exports had more than doubled in comparison to the pre-war level.

Although Liberia has been politically independent since the 19th century, the antecedents to organized forestry are nevertheless within living memory. They began in 1944, when the Liberian Government requested the Government of the United States to send a team of foresters to Liberia to survey the forest resources, to give advice, and to assist in the development of the resources. A reconnaissance survey was carried out in 1947-49. However recent Liberian activities may appear, they are not too dissimilar to those which characterized the beginnings of forestry in other African countries half a century earlier.

From this brief historical review, the common pattern of the first stages of forestry development may be summarized as follows: First, the timber exploiters were on the scene for decades, producing logs within manpowered hauling distance from the lower reaches of a few rivers. Second, in some places there was keen competition between rival companies, thus complicating the possibilities of obtaining timber concessions from local land owners. Third, the companies increasingly needed not only the political support of their home government, but also the arbitration and technical advice of foresters stationed in producing areas. Fourth, realizing the economic well-being of the timber operators, the local administrations were anxious to organize the activities of timber producers for the purpose of revenue collection. Fifth, it was apparent that, if nothing was done to replace the few species being creamed for the European market or to increase the number of species considered of commercial value, the timber trade would inevitably collapse. Consequently, the proposal that an arm of the administration be established to regulate the activities of timber operators as well as to accept responsibility for initiating development policies for the resource in the new territories enjoyed wide support and approval.

FOREST PROTECTION MEASURES

At the end of the 19th century and until the outbreak of the Second World War, the successes of the German foresters employed in British India (1856-1884) had a dominant influence on the course of forestry in Great Britain and throughout the former British Empire. It is not surprising, therefore, that the forest protection measures - forest ordinances, bills and timber regulations - adopted in the colonies were direct counterparts of earlier Indian experiments. As in India, the forest legislation in Kenya preceded the establishment of the forest administration by 11 years, in Nigeria by 5 years, and in Ghana by 2 years. Generally speaking, nine main provisions were included in the forest laws of these countries.

- (1) Reservation of forest areas;
- (2) Classification of forest offences and procedure for the arrest and prosecution of offenders;
- (3) Issuance and control of timber licences;
- (4) Issuance of special licences for the local use of wood and secondary forest produce;
- (5) Compounding of forest offences by duly appointed forest officers;
- (6) Establishment of the procedures and functions of the forest service;
- (7) Prescription of circumstances in which bona fide land owners and certain forest operators could take specified forest produce free of charge;
- (8) Rules governing the payment of fees and royalties for forest produce harvested; and
- (9) Responsibilities of licensees for the establishment and maintenance of succeeding forest crops.

Following the publication of legislation, the exploration and declaration of reserved forest areas proceeded as quickly as was feasible with the staff available. In the southern States of Nigeria, some administrators became interested in the forest reservation policy; they were able to persuade some powerful rulers to donate high forest areas to the British monarch. The original legislation aimed at protecting the most vulnerable forests situated along river valleys and hill tops which were being threatened by shifting cultivators. The early gazetting of reserved forest areas usually referred to natural boundaries such as rivers or lines from hill top to hill top which could easily be defined and described. Further revisions became necessary when the boundaries were surveyed and demarcated on the ground so as to exclude treeless farm land or to add forests which inadvertently had been excluded by the first boundary descriptions.

Progress in forest reservation was supported by periodic revisions and improvements of the forest legislation. For instance in Kenya, the 1902 Forest Regulations were replaced by the Forest Ordinance of 1911 which expanded the earlier legislation. This made in particular provision for demarcated forests with the objective of giving greater security to the forest estate. Unfortunately the procedure for declaring a demarcated forest, although theoretically simpler than gazetting, was cumbersome in reality. In Ghana, a Timber Protection Ordinance was enacted in 1907, but the Forest Bill introduced in 1910 generated political upheaval, particularly by the Aboriginal Rights Protection Society, for fear of loss of ownership of land. The local feeling was against alienation of forest lands and these fears had to be allayed before the bill became an ordinance in 1927. In the meantime, local councils were encouraged by the Forestry Department to undertake forest reservation under the Chiefs' bye-laws and under the Native Jurisdiction Ordinance. Moreover, through the 1927 Forest Ordinance, the government acquired the right to reserve forest land in the national interest, provided that it was unlikely for the local council to do so in the near future.

Between 1897 and 1916 seven important ordinances and proclamations relating to forestry development in southern Nigeria were promulgated. They dealt with timber protection, the obligation of the timber operator to plant seven saplings for each felled tree (also applicable in Ghana in those days), and the compulsory acquisition of land in respect of which it appeared that the destruction of forest imperilled the continuous supply of forest produce. They provided also for the temporary protection of forest growth, pending the declaration of such vegetation as forest reserve and the payment of royalties to land owners for the produce harvested.

Four other aspects of the early legislation appear to be of particular interest. In Ghana, Kenya and Nigeria, the procedure for constituting forest reserves was time-consuming and it was apparent that, unless it could be improved, farming operations might destroy the best forests. In order to speed up the reservation programme, itinerant courts were established, each consisting of an administrative officer, a forest officer and a survey party. These courts took evidence from local inhabitants, ascertained evidence of claims and recorded the proceedings; their judgement facilitated the constitution of forest reserves. Second, an important provision in the forest legislation concerned the compounding of forest offences. This is a judicial power which gives an approved forestry officer the right to fine persons who have broken certain specific regulations of the forest law. Third, there was a tendency to proceed with forest reservation in accordance with some general prescription of the proportion of land area to be reserved, irrespective of the socio-economic conditions prevailing in the particular country. In Nigeria, both the Governor and the Chief Conservator of Forests stressed that "not less than 33% should be reserved - as in India, where the population is very dense - and that 25% of the land surface should be the minimum for Nigeria as a whole" (Lugard, 1918). This is another indication of the fact that forest officers were at that time influenced in their general approach by the Indian forest practices, despite the very different conditions in the African countries. Fourth, it was assumed that the creation of forest reserves would be followed by a demand for forest produce yielding a steady revenue. Care and thought were given at the outset to the allocation of these funds; there were regulations from time to time which determined the distribution of the collected forestry revenues between the government and the land owners.

In Tanzania, a fairly comprehensive ordinance was produced in 1921, shortly after the country was mandated to Britain, and no new (principal or supplementary) legislation appears to have been passed until 1947. The early Tanzanian forest law differed in one important aspect from the laws of Ghana, Kenya and Nigeria. It provided that the Governor could declare an area to be forest reserve if he was satisfied that such an area was not subject to any subsisting native or other rights. This meant in practice that a forest reserve could only be declared in almost uninhabited areas. It is also interesting to note that the legislation contained two excellent examples of ultra vires rules. One of the provisions of the forest regulations sought to give the Conservator of Forests power to compound offences, but there was no enabling section in the parent ordinance to justify this. However, the power of compounding should have been incorporated in the parent law and should not have been left to subsidiary legislation. In another case, the parent law had given power to the Governor to prescribe fees and royalties, but subsequent regulations purported to sub-delegate part of this authority to the Chief Conservator. For this sub-delegation to be legal, it was necessary to retain control by making the Chief Conservator's decisions the subject of appeal to the Governor on the part of any aggrieved person. Alternatively, the Governor may have been given express power in the parent law to sub-delegate.

Cameroon had different forest experiences since 1919, when the former German colony of Kamerun was split into two and mandated to Britain and France. The western part of the country was administered as Nigerian territory and was accorded regional status within the Federation of Nigeria in 1955. The forest laws of Nigeria were substantially in force in the English-speaking part of Cameroon. In 1960 the latter joined the French part of Cameroon and became a State of the then "Federal Republic of Cameroon". In the eastern part, basic forest legislation was introduced in 1946 through a general decree on forestry. Important modifications were made in 1962 and 1968, when a forest ordinance and a forest law respectively, both supplemented by various forestry decrees, were adopted. In 1972 the United Republic of Cameroon was created and a national forest law (1973), together with general forest regulations (1974), was promulgated, replacing the former separate forest legislation of the English- and French-speaking parts.

Two forest laws have been enacted in Liberia: an Act for the Conservation of the Forests (1953) and the Forestry (Supplemented) Act (1957). As the titles suggest, the basic law was primarily conservation-oriented; its provisions, relating to the granting of timber harvesting rights, have been expanded and improved since 1973 by new model contracts prepared by the Concession Secretariat.

In initiating forest reservation policies in these countries, emphasis was placed on the future production potential of the forests, although it is evident that the importance of the vegetation as a source of secondary forest produce for the local population as well as for agricultural needs, especially the expanding cocoa, coffee and rubber plantations in West Africa, had also to be taken into account. It may be that the rather flexible approach to the delicate question of forest reservation was deliberately adopted as the one more likely to be accepted by the public. Thus, despite the strong local opposition in Ghana until 1926, it was possible to increase the area of forest reserves from 25,900 ha. in 1923 to 629,630 ha. in 1934, and to nearly 1.5 million ha. in 1939. In Nigeria, where land tenure problems are similar to those of Ghana, the pace of forest reservation was less rapid: over 40 years, the reserved forest area increased from 9,125 ha. to 5.7 million, representing more than 60% of the present forest estate. However, in Kenya and Tanzania, the relatively small populations with minimum claims provided a good opportunity in the two countries for almost complete reservation by 1939. As an example of an area where forest reservation made practically no progress at all, the French-speaking part of Cameroon may be cited. In 1969, the permanently reserved forests of Eastern Cameroon amounted to only 124,000 ha. or less than 1% of the high forest zone, whereas in the English-speaking part 14% of the total land area was under constituted forest reserves (FAO, 1973).

Since the end of the Second World War there has generally been a sharp decline of the forest reservation momentum and consequently a decrease in corresponding legislation and reservation decrees. The main reasons for this decline have probably been the stronger competition from other land uses, an increased reluctance of rural land owners to devote large areas of land permanently to forest use, and a growing awareness among policy-makers that mere reservation without specific economic and social justification might not be compatible with optimum land-use objectives. This tendency is not necessarily irreversible, since an increase in demand for timber and other forest produce, as well as ecological and soil conservation factors, may well call for more reservation of either production or protection forests once the overall land-use requirements are more systematically assessed in the national context. On the other hand, it may then also become necessary to release certain parts of already classified forest areas that can be used with greater advantages for other purposes.

The overall effect of the rather protracted history of forest legislation was the emergence of a legal framework for the sector which provided the fundamentals for forest protection measures and in particular for the creation of forest reserves. The laws reflected the concepts and forest policy objectives mainly as they were understood and pursued by the administrators at that time. Instead of being oriented towards a balanced socio-economic development, they were to a large extent regulatory in character and were promulgated with little reference to local conditions. Nevertheless, they offered a first start for a planned use of forest resources and the institutional basis for the activity of national forest administrations.

COLONIAL FOREST ADMINISTRATIONS

Colonial forest services did not always start in connection with the beginnings of commercial forest exploitation for log exports. Uganda had the earliest nucleus of a forest service in the Botanical and Agricultural Department of 1899, although its Forestry Department emerged only in 1917, many years after those of Kenya, Nigeria and Ghana. However, Kenya had one of the first forestry establishments on the continent. The mangrove exploitation interests of Imperial British East Africa paved the way for the setting-up of the Kenya Forestry Department in 1902. The department flourished from 1907 to 1911, and by the outbreak of the First World War it had an enviable technical strength in that it had a Chief

Conservator of Forests (CCF), 4 Assistant Conservators of Forests (ACF), 11 foresters, 1 assistant forester, 80 forest guards, 41 assistant forest guards, 1 accountant, 1 seedsman, 1 head clerk, and a typist. The country had also been divided into four forest zones, each one with an ACF in charge and with headquarters in Nairobi, Mombasa, Nyeri and Londiani. Kenya's achievement within the first twelve years was momentous and unequalled elsewhere.

There were two main facets to the early history of the Nigerian Forestry Department. One was political in that the northern and southern provinces of Nigeria were joined in 1914, while the other consisted in the support that the founders of forestry received from the colonial administrators in southern Nigeria as against the antagonistic attitude the administrators in northern Nigeria adopted towards the forestry cause (Adesoyu, 1975). In southern Nigeria, a great deal of enthusiasm for forestry was caused by the "Sketch of the Forestry of West Africa", published in 1887 by the Governor, Sir Alfred Moloney. In 1897, the High Commission in Lagos proposed to the Secretary of State for the Colonies that forestry should be controlled by the State and that the Indian system of forest conservation should be adopted. This proposal was followed in 1899 by the appointment of two people - one stationed in Lagos and the other in Calabar -, who were to look after the forestry affairs of the protectorate. In the meantime it was realized that, in spite of the excellent work of a few individuals, the general ignorance of appropriate techniques and the lack of a definite forest policy were bound to result in poor and uneven control of timber merchants and other users of forest produce. In 1902, H.N. Thompson was appointed Conservator of Forests for the Southern Nigeria Protectorate. He had to assume responsibility not only for forestry, but also for agriculture under the Department of Forestry. It is interesting to note that agriculture remained as an adjunct of forestry for some years and started as an offshoot in a separate department in 1910.

Thompson remained a dominant figure in West African forestry for 26 years. During the first decade of his administration, the chief duty of the new department was the control of mahogany exploitation and rubber collection from a variety of latex-producing plants. With the experience he had gained in India, Thompson was fully aware of the need to obtain security of tenure of areas within which to practise long-term forestry. This was an uphill struggle. Opposition from land owners, politicians, and often the administration itself, seriously impeded the work. In northern Nigeria, for instance, the District Officers (DO's) were exceedingly mindful of their authority and disliked the idea that a technical department should have direct contacts with the local people; nor could the DO's perceive the possibility of a department having its own staff outside the departments of general administration. It was also difficult for them to accept that the Forestry Department had the power to issue permits and collect fees for forest produce.

The shortage of trained foresters prevented a rapid expansion of the activities of the department in Nigeria. Most British officers opted for careers in India and in the more favourable climatic conditions of Kenya. At the time of the administrative union of Northern and Southern Nigeria in 1914 there were only two forest officers in the northern provinces. However, from the 1920's onwards there was an influx of professionally trained expatriate officers. Before he retired, Thompson introduced the use of botanical names for the species, all of which had different names in local languages. This simplified the work of the Silvicultural and Working Plans Branches established in 1930-31. The Silvicultural Branch laid down a series of regeneration experiments which later provided clues for the initiation of simple working plans prescribing a hundred-year felling cycle. These plans were an important basis for the long-term forest concessions granted immediately after the Second World War.

The Ghana Forestry Department was established in 1909 on the recommendations of H.N. Thompson, who toured the country extensively in 1908. He suggested, among other things, the formulation of a forest policy, the enactment of forest legislation, the protection of timber trees, the introduction of property marks for tree-fellers, the collection of botanical and working plan data and the establishment of plantations. The new department had to be closed down from 1915 to 1919 owing to difficulties caused by the world war, but it resuscitated in 1919, rapidly embarking with new staff on silvicultural and working plan exercises and a herbarium. On the utilization side, research into drying, shrinkage, work-

this course of events was the special attraction of the East African climate which encouraged European settlements and led to further relegation of African affairs. In the case of West Africa, where there was no permanent European settlement as such, the proximity to Britain fostered fairly intensive contacts and the existence of a relatively high standard of African education from very early colonial times.

TABLE 1 illustrates the history and progress of the africanization policy of the forest services at the time of political independence. It may be observed that this was not a remarkable achievement, since it took 46 years to produce the first Nigerian professional forester. In Ghana and Tanzania, the process took nearly the same time as in Nigeria; 42 years in Tanzania and 43 years in Ghana. But Kenya, which has the oldest forest service, had to wait for 62 years before the initiation of its first indigenous professional forester, although in the 1950s three Europeans were sent to Britain to take degree courses. Two of the Europeans were successfully absorbed into the Kenya forest service. However, at independence, a large number of Nigerians and Ghanaians were undergoing training in various institutions in Britain, USA and Canada. In 1957 and 1960, the situation in Ghana and Nigeria was that the expatriate staff slightly outnumbered the Africans and the committed personnel still in overseas universities.

TABLE 1: Africanization of professional forestry staff

Country	Forest Department established (year)	First African appointed (year)	No. of Expatriate Staff v. First African Officer	At Independence				
				Year	No. of African professionals	No. of Africans undergoing training	Expatriate Officers	
CAMEROON	- English-speaking	1920	1957	3	1961	2	None	2
	- French-speaking	1920	1964	4	1960	None	1	6
GHANA	1909	1952	22	1957	6	12	22	
KENYA	1902	1964	36	1963	None	12	38	
NIGERIA	1903	1949	36	1960	27	26	55	
TANZANIA	1920	1962	46	1961	None	5	52	

The training of the intermediate staff, i.e. the technicians, was given considerable attention much earlier than that of the professionals. Basically, the contention was that, while the African was amenable to training and capable of demonstrating himself if given the opportunity, the idea of his competing for the same job and enjoying the same perquisites as the Europeans was not accepted for a very long time. The expectations of the Africans were limited to the jobs of clerk and lowest cadre technician; they had the restrictive education which made them qualify only for such jobs; but most of them were ineligible to aspire much beyond. However, it became obvious that the few exploitation labourers being attracted to the forest services were ignorant of most aspects of forestry; they required training not only for orientation purposes, but also for making them useful, reliable and efficient subordinates of the professionals. The schools of forestry in Tanzania (founded in 1937), Nigeria (1941), Ghana (1943), Cameroon (1949) and Kenya (1956) fulfilled these needs with varying degrees of success.

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Previously, both Kenya and Tanzania recruited their forest technicians from Britain, in addition to those recruited locally and trained in the field. An interesting point is that, while the old and well-established Forestry Training Institute in Olmotonyi, Tanzania, closed down during the Second World War, Nigeria and Ghana started theirs during those difficult years. These two West African countries needed some knowledgeable technicians for forestry war efforts (particularly the collection of latex). In Ghana, the department was unsatisfied with the content of the agricultural course at Cadbury Hall, Kumasi, where the technicians had been trained earlier. Kenya introduced short courses after the war years, mainly for ex-service men, in preparation for further training in Britain and South Africa.

The resources of these schools were far from sufficient; there was no special curriculum, nor were the schools conceived as permanent institutions. However, in spite of the difficulties of the earlier years it must be stated that the schools provided the first contacts with forestry and crucial career interests for African technical forestry personnel. They have also remained the bastions of forestry education in these countries and are of special importance to many forest officers as "take and give" places where they first had to learn and then could teach in succeeding years. In some countries, the School of Forestry had also been used for the vocational training of forest guards, timber inspectors, silvicultural assistants, bee-keepers, forest survey assistants, mensuration assistants, etc. The courses for these groups were held as and when the need arose and had nowhere been regularized.

THE POST-INDEPENDENCE PERIOD

Not long after the Second World War it became apparent that the colonies were moving rapidly towards political independence. On its own part, the British Government laid down numerous and protracted ability tests for the colonies, ranging from the formation of political parties, conduct of parliamentary elections, initiation of responsible governments, and grant of internal self-government, to the attainment of sovereignty, with continual constitutional conferences and debates all along. The political gains made at various stages had no major implications for resource development policies. This was because the primary goal of the colonies was to become masters in their own homes and later turn search-lights on the components and structures of their edifices.

Thus at independence there were no changes of heads of forest services. Of the five ex-colonies included in this study, Nigeria (i.e. the former Western Region Forest Service)^{1/} was the only one that had an indigenous CCF. Even in the case of Western Nigeria, the preceding expatriate CCF was retained on contract as the Forestry Adviser to the Minister: a situation that was slightly incongruous, since the CCF, as head of the forest service, was also the chief forestry adviser to the government. It was not until 1964 that the four Nigerian forest services were entirely headed by local personnel, although for a few years afterwards some key posts, particularly in the Federal Department of Forest Research and in the former Northern and Western Regions, were held by expatriates. Ghana, which became independent $3\frac{1}{2}$ years before Nigeria, had its first African CCF in January 1961, seemingly supported by a forestry adviser in the person of the preceding CCF.

The rate of promotion for African forestry professionals to the top ranks of the service proceeded at greater speed in East Africa than in West Africa. For instance, the first Nigerian CCF spent nine years as a forest technician, and further ten years in the professional rank before he reached the top position. In Ghana, the first African CCF was in the service in one way or another for 16 years, nine of which he spent as a professional officer before heading the service. In Kenya and Tanzania the situation was significantly different; the first African CCFs spent only 3 to $3\frac{1}{2}$ years as professional officers, after which they became *de jure* heads of service. It is also pertinent to observe that in the case of Kenya and Tanzania, the CCFs did not go through technicians' training and field experience before going to the university to study forestry.

^{1/} As a result of the federal constitution adopted in 1952, three political regions were established, each with its own forest service in addition to the Federal Department of Forest Research.

Before independence, the Forestry Departments in these countries had had an average existence of 50 years. During that period there were changes in the functions and priorities of each department. Excepting the French-speaking part of Cameroon, where, as in other French-speaking African countries, forest reservation was less effectual, the countries had to all intent and purpose passed the reservation phase. At the next stage, the functions of the Forestry Departments were generally in this order: (a) consolidation of the forest reserves that had been declared; (b) preparation of working plans for each reserve; (c) award and administration of concession agreements; (d) control of forest exploitation; (e) encouragement of local wood-processing, including pitsawing; (f) protection of forest reserves; (g) initiation of silvicultural and utilization research, and (h) training of local staff. The real achievement of the colonial forest services had thus been largely in two directions: (1) they had slowed down the forces of forest destruction; and (2) they had started to enrich the growing stock and had built a stable forest estate in an unexplored forest environment. They, therefore, handed to the local decision-makers a viable forest resource base with vast opportunities for satisfying specific national needs and for career fulfilment.

At the time of independence, the first long chapter of the forest histories of Ghana, Kenya, Nigeria and Tanzania had thus been concluded, while that of Cameroon was still hazy and incomplete. The problems that have since engaged the attention of the departments are of a more technical rather than legal nature. The prosperous and expanding timber industry, together with extensive clearing of unreserved forests for agricultural uses, brought nearer the time when greater demands had to be made upon the forest estate. Silvicultural research, mainly concerned with the techniques of increasing productivity per unit area, and the management of forest reserves under intensive working plans became important features of departmental programmes of work.

TABLE 2 presents a summary in which the principal differences and varying activities of the former colonial forest services are compared with the new national forest administrations. This comparison should not be viewed as a score-chart. Its purpose is to illustrate the different circumstances and problems with which the forest services had to contend. It also shows that the long struggle to secure adequate forest reserves has been carried on in the face of sometimes official apathy and nearly always of popular opposition and suspicion. But gradually the opponents of reservation, if not silenced, were quietened and legal difficulties overcomes. The prospects of maintaining the bulk, if not the total, of the forest estate, and of developing the national forest resources to make a greater contribution to socio-economic development, are gradually improving.

TABLE 2: Comparison of major problems of forest administrations during the colonial period with those affecting them in post-independence times

Subject	Colonial Forest Service	Post-Independence Forest Service
Legislation	Fairly copious on reserve settlement, admission of rights, forest resource protection, and provision of forest taxation.	Cameroon and Ghana have published new acts; others make use of the power of regulations incorporated in the parent law.
Reservation	Practically all existing forest reserves in Ghana, Kenya, Nigeria and Tanzania were declared and consolidated in the colonial period.	In French-speaking Cameroon, forest reservation intent was published but not effected; plans are still being formulated for the proper constitution and demarcation of the permanent forest estate. In other countries, reservation policies are proposed for marginal lands. In Kenya and Nigeria there are occasional strong pressures to de-reserve parts of the forest reserve.

Subject	Colonial Forest Service	Post-Independence Forest Service
Forest Policy	Policies were published after approval by colonial governors. Most policies prescribed the aims, while a few others included the means of attaining the goals.	Kenya is the only country that has published a comprehensive forest policy in the post-independence era. The forest policy objectives of all countries are now adjusted to, and integrated into, periodic national plans. They may change from one plan period to another and are increasingly a reflection of the dynamic policy of economic development in each country.
Forest Administration	Exclusively expatriate forest managers. Kenya and Tanzania also had a large number of expatriate technicians. There was an exodus of expatriate officers, taking advantage of the "Lump Sum Compensation Scheme" for loss of career opportunities shortly before and after independence.	Very few African forest managers. All national forest services were headed by expatriates at independence. Newly recruited local forest officers were saddled with tremendous responsibilities. Staff shortage and lack of funds limited the expansion and execution of operational activities. In some cases, new expatriate officers were appointed on contract terms.
Forest Management	Concentration of efforts on botanical and enumeration studies. Acceptance of the Tropical Shelterwood System/Modified Uniform System. Large-scale plantations in Kenya and Tanzania.	Discontinuation of the Tropical Shelterwood System largely on economic grounds. Introduction of a policy of conversion of large areas to plantation crops of fast-growing species with specific management objectives. Modification of the theoretical 100-year rotation cycle in tropical high forest to shorter cycles. Possibilities of multiple-use management objectives foreseen.
Forest Industries	In the first 50 years, local forest industries were largely limited to primary processing: sawmilling. Later, Ghana and Nigeria had each a plywood manufacturing unit. Exportation of unprocessed logs continued unabated.	The sovereign governments have forced structural changes in favour of increasing local wood-processing, marked participation of nationals, and establishment of integrated wood-manufacturing complexes, including pulp and paper industries. In Ghana, a powerful timber marketing organization has been established. In Liberia, the Concessions Secretariat is progressively eliminating the abuses and excesses of uncontrolled forest exploitation.
Forestry Education and Training	Technicians' training schools were established. Probably as a result of deliberate policy, training programmes for professional officers were ignored and/or delayed. No professional training institution was established or planned.	Crash training programmes were established for local personnel at all levels. Technicians' training schools were enlarged. Facilities for the training of professional foresters were established in Liberia (1955), Nigeria (1963), Tanzania (1973), and planned for Cameroon (1976). Post-graduate and short, but intensive, courses are frequently organized for professional officers. Ghana and Nigeria have recently started post-graduate training programmes in wood technology.

Subject	Colonial Forest Service	Post-Independence Forest Service
Research	<p>Silvicultural research plots were started. Most of the utilization tests were carried out in metropolitan countries.</p>	<p>After more than ten years of independence, most countries are beginning to allocate resources to a wide range of research projects. Nigeria and Ghana have separate forestry research organizations, dynamic research policies, increasingly modern facilities and moderately adequate resources. In Cameroon, forest research has recently been reorganized.</p>
Wildlife Conservation	<p>In Kenya and Tanzania, wildlife conservation has been separated from the responsibilities of the forest services. In Nigeria, wildlife preservation legislations were published, but there was no development of the resource. Also in Cameroon the policy intention was not carried to the field.</p>	<p>The Ghana forest service assumed the responsibility for wildlife at independence for about 13 years. For the purposes of rapid development of Ghana's tourist potentials, wildlife conservation was separated from the Forestry Department in 1970. Increasing attention is being paid to this resource in Nigeria and Cameroon. Wildlife technicians' training schools have been established in Tanzania (1964), Cameroon (1968), and Nigeria (1975). In Kenya and Tanzania, wildlife and national parks belong to separate departments.</p>
Extension Forestry	<p>Extension was largely neglected. However, some efforts were made in Kenya and in northern Nigeria in order to promote forestry appreciation among the inhabitants of the drier parts and areas prone to soil erosion.</p>	<p>Albeit belatedly, each forest service now considers the necessity and value of forestry extension programmes as essential for integrated forest development.</p>
Professional Affairs	<p>Non-existent in the colonial period; a probable obstacle was the small number of professional officers and the lack of easy communication between the territorially dispersed officers.</p>	<p>Lack of tradition has been an impediment to the formation of professional associations in most countries. Nigeria has a strong Forestry Association. Membership is open to all with interests in forestry.</p>

CHAPTER 2

NATURE AND PURPOSE OF PUBLIC FOREST ADMINISTRATIONS

NATIONAL FOREST POLICY OBJECTIVES

The nature and role of forest services are mainly influenced by three important factors, namely legislation, general administration patterns and national forest policies. Whereas the evolution of forest legislation and the establishment of forest administrations have been summarized in the previous chapter, the following section reviews the content of forest policy objectives as they have been elaborated and officially declared in the various countries. It is of course obvious that formal policy announcements represent only one aspect of national forest policies and that there have existed and still exist other ways in which forest policy objectives have developed. Thus the successive laws and the changing administrative structures were based on some general policy concept of how the forest resources should be utilized in the public interest, even if these had not explicitly been stated and published. It should also be realized that it took a long time to form the fundamentals of national forest policies as they are pursued today.

Ghana and Nigeria published their first policy statements in 1946. As would be expected, the Ghanaian forest policy dealt mostly with the ways and means of developing its timber industry. Perhaps the most important aspect of the policy was Clause 5 which sought to match the rate of forest exploitation with some sort of timber harvesting programmes for the unreserved forest areas. The aim of the clause was that "the progressive utilization, without replacement, of the remainder of the forest resources not permanently dedicated to forestry, should be controlled in such a way as to make its supplies as long as possible compatible with market requirements, and particularly until the utilization of forest reserves can be accompanied by successful regeneration, while at the same time utilizing its supplies to the utmost prior to their destruction by farming". To guide and control the timber industry in the execution of this policy, amendments to the Concessions Ordinance were introduced in 1946. In 1951, the first Minister of Commerce, Industry and Mines ordered a fact-finding committee to report on the timber industry. When the committee completed its work in September of that year, it made fundamental recommendations regarding the future of the industry. Although the recommendations were never transformed into a White Paper or new policy document, they provided nevertheless the springboard for many subsequent activities of the forest service.

A ten-year (1945-56) Forest Administration Plan was published in Nigeria in 1946, embodying six main policy objectives: (a) forest reservation; (b) management of high forests on the principle of sustained yields; (c) increased government participation in forest exploitation; (d) dual management purpose (wood production and grazing) of savanna reserves; (e) provision of firewood plantations in specific localities; and (f) maintenance of an efficient forest service. After the adoption of a federal constitution in 1952, the three constituent regions (East, North and West) published new policies in 1963, 1952, and 1955 respectively. The policy objectives of the Northern and Western Regional Governments contained a great deal of traditional items, while the Eastern Regional Government planned inter alia to establish nurseries of economically usable tree species primarily for distribution to local people and to undertake public relations programmes.

The Kenya Forestry Department had no formal forest policy prior to 1957. For nearly sixty years it had followed the general recommendations of a succession of visiting experts who came to advise on forestry matters. Their reports did not contain statements of policy, but in most cases they clearly indicated the lines on which they considered work should proceed. In 1957, the Government published a White Paper on forest policy matters. The forest policy was then revised in 1968 under the circumstances of political independence,

but the objectives of 1968, comprising forest reservation, protection, management, industry, employment, finance, public amenity and wildlife, and research and education, remained largely those of 1957.

Tanzania published its forest policy in 1963. In a report to the Commonwealth Forestry Conference of 1962, the Forestry Department noted that its "forest policy is like those of member nations in the Commonwealth. The government regards the forests as an important national asset fulfilling a dual function of providing timber, poles and other forest products which are essential to the commercial, domestic and communal needs of the people, and assisting the conservation of water on which the country's well-being so vitally depends. The government accepts that these two functions of production and protection can best be fulfilled by setting aside areas of land as permanent forest reserves throughout the country". The other policy objectives pertained to management, harvesting, employment, and education.

No formal forest policy has yet been published in Cameroon, but certain policy elements may be observed in the new forest legislation and in the last two Quinquennial Plans (1966/71 and 1972/76). The national plan objectives are the promotion of forestry development, the creation of wood-using plants, the need for intensive silviculture, protection of savanna woodland, cooperation with other authorities in soil conservation, research, and training. Other policy objectives emphasized in the past were the creation and consolidation of a permanent forest estate, prudent utilization of resources outside the forest reserves, dynamic management regimes, creation of employment opportunities, and the promotion of rural forestry development.

Liberia has no formally declared forest policy. The main activity of the forest service over the last fifteen years has been that of forest reservation, although in recent years the conversion of the natural forest has been started in many localities. The creation of the Concessions Secretariat in 1973 introduced the possibility of adopting rational utilization and management objectives.

Within the Commonwealth countries, the issuance of public forest policy declarations and their continual review had been strongly encouraged by a resolution of the Sixth Conference held in Ottawa in 1952 which "...unanimously affirmed that it was of the utmost importance for each country to have a definite forest policy and that such a national policy should be clearly set forth and widely publicized". Sooner or later, most countries published essentially identical forest policies irrespective of obvious ecological and social disparities; they all sought to "reserve land in perpetuity for the greatest good of the greatest number", to sanctify sustained yield management, and to make a maximum contribution to economic growth. While these objectives were attractive and worthy, they were nevertheless contradictory, since the economic prospects envisaged might have been severely restrained by the retention of sustained yield management. Moreover, since there was no precise definition of 'long-term benefits', 'greatest good' and 'best advantage', all crucial policy goals, and the means of attaining these goals, were rather perplexing.

A significant feature of earlier forest policies is thus the omnibus intention which makes it exceedingly difficult to reconcile the multiplicity, ambiguity and order of aims purported by the statements. Another characteristic aspect is that the objectives and policy means are frequently classified as one and the same. For instance, forest administration, research, education and finance were purported to be objectives, whereas they should have been considered as means of attaining the stated goals such as forest reservation, wood production, employment, industrial transformation of the raw material, and reforestation. Some features in national forest policies appear, however, to be more significant for some countries only. By far the most striking of all the objectives, and one through which Nigerian forestry achieved a certain degree of notoriety, is that which states: "Where the competence and will to undertake exists, the control and management of forests shall be devolved upon local administrations, who shall receive all revenue, but subject to such control by government as will ensure that management is in accordance with the government's forest policy. Policy shall be to encourage the acceptance of responsibility by local administrations." It is worth noting that, since the overall policy was to hand over as much of the forest reserve as possible to local authorities, the condition for

local council involvement, particularly that of competence for discharging the responsibility, was easily superseded by the will to undertake it. The "control by the Nigerian forest services became a remote and ineffectual control" (Adeyoju, 1975). Another peculiarity is that of Kenya, where wildlife and national parks are the responsibilities of other departments, and where the policy objectives of the forest service are not necessarily compatible with those pursued by the Game Department and the National Parks Authority.

Another important feature of earlier forest policies is the very long-term planning cycle that was usually adopted. It is certain that forestry is often a long-term enterprise, but its long-term outlook is now being reduced through prospective plans of short- and medium-range periods. While the former forestry objectives complied with a more or less interminable 100-year utilization period and a rather leisurely economic pace, such objectives are hardly tenable in the rapidly expanding economies of post-independence. Hence long-term policy declarations and intents are now rare. Instead, there are succeeding periodic plans, large- and small-scale projects, and numerous targets which are part of national development plans. The forest policy objectives thus become more and more derivatives of the broader objectives of national economic development.

For example, two countries may be cited, i.e. Kenya and Nigeria, which have recently launched development plans. The general development objectives, as adopted by the respective governments, as well as the sectoral targets for forestry have been summarized in TABLE 3.

TABLE 3: Priorities as established by national and sectoral development planning in Kenya and Nigeria

KENYA		NIGERIA	
National Economic Objectives as defined by the Third National Development Plan 1974-78	Forestry (Sectoral) Objectives 1974-78	National Economic Objectives as defined by the Third National Development Plan 1975-80	Forestry (Sectoral) Objectives 1975-80
(i) to minimize income differentials;	(A) to expand the forest resource base;	(i) to maintain economic growth and development;	(i) to establish large-scale plantations of fast-growing species;
(ii) to ensure that everyone has access to means of livelihood;	(ii) to preserve water catchment areas;	(ii) to stabilize prices;	(ii) to foster integration between forest products and forest-based industries;
(iii) to stimulate wide use of the environment, its development and conservation;	(iii) to reclaim land and prevent soil erosion;	(iii) to ensure social equity.	(iii) to conserve the environment by prevention of fire outbreaks and overgrazing;
(iv) to create a community of common interests and national consciousness that will unify the people into a single nation;	(iv) to provide self-sufficiency in timber;		(iv) to develop wildlife resources for amenity values and as a source of protein supply.
(v) to increase foreign exchange earnings.	(v) to increase exports of wood products.		

It may appear at a first glance that there is rather little relationship between national and sectoral development objectives. However, within each economic sector, programmes are approved and targets set for each project, so that, in Nigeria for instance, substantial economic contributions may be made by: (a) generating to government more revenue from forest utilization in general (fiscal policy) to enable it to maintain economic growth and development; (b) providing more employment opportunities so as to accelerate the attainment of social equity; and (c) undertaking infrastructural development in order to improve the productivity of forest workers.

Kenya has set a number of goals in forestry which should lead to increased volume and value of export wood products, more employment opportunities and greater cohesion of different ethnic groups in forest villages, thus making them compatible with the general objectives of national development planning.

Tanzania was to launch its third national development plan (1975-80) this year, but owing to some difficulties, the plan has been postponed. Meanwhile, the forestry proposals have been made in the spirit of the well-known national objectives, which are: (a) Tanzanian socialism and self-reliance; and (b) equal regional development.

It can, therefore, be said that policy trends in forestry are now governed by a multitude of factors, many of which can be influenced only to a limited extent by the forest administration. Nevertheless, in some countries the forest services may still be able to choose many of the operational objectives and determine their succession in time. But on the whole the criteria for forest policy objectives are increasingly determined by the general aims of government economic policy. An isolated national forest policy is now only of historical importance.

RESPONSIBILITIES OF FOREST SERVICES

The primary responsibility of any forest service is to ensure the rational use of all forest resources. This means in particular the development of the production potential on all land classified as part of the permanent forest estate of the country. This responsibility includes a broad range of particular activities, although the functional boundaries are nowhere precise or rigid. In most countries there are other common functions which can equally be considered as essential for forest service activities. These are connected with: (i) the production, marketing and processing of timber, and (ii) the management of forests which play an important protective role for soil and water conservation. Consequently, the responsibilities of the forest services with regard to the major aspects of resource utilization comprise among others:

- (a) the creation of permanent forest estates where scientific forestry can be practised;
- (b) productive management, including, where necessary, replacement of the original tree cover with superior substitutes;
- (c) encouragement of, and participation in, means of full and efficient utilization;
- (d) the enforcement of all laws and regulations relating to the resource;
- (e) the conduct of forestry research;
- (f) the provision of training and technical assistance to all concerned with forestry and related activities; and
- (g) leadership both in concept and practice.

The forest resources encompass in addition various other products which are used locally or on a commercial scale, but, because the consumption and trade of such products are either too limited or their real importance is ignored, improperly recorded, and their production not actively encouraged, they are classified in practically all forest laws as "minor forest produce". There is no complete list of this type of product, nor is there un-

animity among the forest services on what should be defined as "minor forest produce". Even within Nigeria there are regional and legal variations with regard to the components of this type of produce.

The abrogation of forest service responsibilities^{1/} has been far less frequent than the addition of new tasks. Indeed, there has been a continuous increase through deliberate action or acquiescence of responsibilities such as the establishment of shelterbelts, windbreaks and roadside plantations (Nigeria), food production on forest lands and occasional silkworm cultivation (also Nigeria), erosion control, reclamation of marginal lands, and road-building for public use as and when the need arises (in most of the countries), seasonal provision of grazing territory for cattle in savanna regions, and establishment of forest villages with basic amenities (Kenya and Nigeria). Also, as a result of deteriorating environmental qualities and seasonal fire hazards to forest plantations in certain ecological zones, most forest services have had to pay increased attention to forest fire prevention, detection and control. Certain additional tasks which have been carried out regularly have in some circumstances gained considerable importance. The forest service's responsibility for inland fisheries development in Cameroon (as in all French-speaking countries) is a customary organic component, while bee-keeping in Tanzania might be considered an exceptional task of the forest service. Also the forest services of Ghana and Nigeria had once tried bee-keeping operations, but were unable to sustain the venture. Thus each country may have further functions of different priorities assigned to its forest service.

In several countries, some of the earlier functions of the forest services have become so large or so specialized that entirely new departments have been commissioned with these tasks. This refers, for example, to wildlife, game, national parks, zoos and gardens which now belong to separate departments in Ghana, Kenya and Tanzania.

The characteristics of the present institutional pattern and major responsibilities of the various forest services are outlined in TABLE 4.

TABLE 4: Present institutional pattern and major responsibilities of national forest services

Country	Institutional Character	Operational and Financial Attributes	Principal Responsibilities
CAMEROON	A Directorate in the Ministry of Agriculture with limited control of field staff and operations. The Minister has wide powers for planning, staff development, and financial provisions.	Major operations such as the granting of timber utilization contracts and industrial establishments require presidential decrees.	Administration of timber utilization contracts; wildlife and inland fisheries development. Forest regeneration and research belong to separate programmes.

^{1/} For example, the Ghanaian and Nigerian forest services originally had responsibility for the propagation and maintenance of latex-producing trees; latex production was a top priority function of these forest services during the two world wars. Until 1925 the value of palm produce exported from Nigeria was included in forestry export data, and by 1930 plantation rubber was separated from its wild counterpart; the latter remained a minor forest product until 1936, when it was declared an agricultural crop. Nevertheless, the export statistics of both palm produce and rubber appeared occasionally in the annual reports of the Nigerian Forestry Department, but in 1948 the official view was reiterated: "Wild rubber and palm produce can no longer be separated from the production of plantations and private estates."

(Table 4, cont.)

Country	Institutional Character	Operational and Financial Attributes	Principal Responsibilities
<p>GHANA</p> <p>(a) Department</p> <p>(b) Research</p>	<p>The dominant department in the Ministry of Lands and Mineral Resources with strong field operation units and specialized branches for planning, utilization and training, located in different parts of the country.</p> <p>An institute of the Council for Scientific and Industrial Research.</p>	<p>Has access to extra-ministerial funds for special operations; awards of forest concessions are handled by the Lands Department; the Forestry Department is authorized to compound certain offences.</p> <p>Dependent on annual budget.</p>	<p>Responsibility for timber management, production and regeneration; and timber marketing and industrial development. Wildlife and research are handled by other government agencies.</p> <p>Investigation of problems of forestry and forest products.</p>
<p>KENYA</p>	<p>The senior department in the Ministry of Natural Resources; has field units on territorial and project bases.</p>	<p>Entirely dependent on annual budgets. Receives operational inputs from the Ministry of Works; participates in awards of timber utilization contracts; invested with power to compound certain offences.</p>	<p>Responsibility for timber development, marketing, research, and training. Not concerned with game, wildlife and national parks.</p>
<p>LIBERIA</p>	<p>The Forest Bureau in the Ministry of Agriculture; is headed by an Assistant Minister with a great deal of executive power.</p>	<p>Has authority to undertake forest operations; forest concessions are handled by the Concessions Secretariat in the Ministry of Finance.</p>	<p>Responsibility for timber development. Reservation of National Forests.</p>
<p>NIGERIA</p> <p>(a) State</p> <p>(b) Federal</p>	<p>In most States it is a division of the Ministry of Agriculture or the senior department of the Ministry of Natural Resources. In one State, its status is that of an Executive Forestry Commission.</p> <p>A Department in the Ministry of Agriculture; representation in state capitals.</p>	<p>Entirely dependant on annual budgets; takes active part in the award of timber utilization contracts; has authority to compound certain offences.</p> <p>Has no forest estate of its own. Has access to substantial development funds from the Federal Government.</p>	<p>Management of timber resources, minor products, and wildlife. Soil conservation.</p> <p>Advisory role to state forest services. Supports execution of "federal projects" in States. Coordination of state forest policies. Responsibility for international relations.</p>

Country	Institutional Character	Operational and Financial Attributes	Principal Responsibilities
(Nigeria, cont.) (c) Research	An institute of the Agricultural Research Council - a directorate organization.	Dependent on annual budget.	Country-wide research into forestry and forest products and wildlife. Responsibility for technical training.
TANZANIA	A Department in the Ministry of Natural Resources. Management of forest reserves and local projects is undertaken by the Regional Resources Officer in the Prime Minister's Office.	Jurisdiction of the department has been reduced under the decentralization programme since 1972. Annual budgets are provided for the "national projects".	Administration of national forestry projects; responsibility for technical education and research; liaison with Regional Administration for purposes of forestry projects.

THE ORGANIZATION OF FOREST SERVICES

Because of the varied national forest laws, policies and functions of forest services, differences between the structures of forest services exist even within similar English-speaking countries. The differences lie mainly in the ministerial organization and in the internal structure of the administration itself. When the ministerial type of government was introduced, the placing of forestry with other departments using land on an intensive or extensive scale and having a rural setting seemed logical, particularly for rationalizing the various claims to rural lands. Thus forestry and veterinary services came under the Ministry of Agriculture and Natural Resources, the term "natural resources" meaning that the Ministry also caters for the development of forestry, livestock and fisheries. But it was soon apparent that the responsibility of the agricultural department - which is essentially an advisory service for providing certain inputs towards food production - expanded rapidly at the expense of other ministerial activities. The situation developed into two extremes: a resource part of the Ministry represented by the forest service, and the non-contributor of revenue, but large spender, represented by the agricultural extension service. This combination of departmental responsibilities in one Ministry has not always proved to be an adequate solution for a balanced development of the forestry sector, and other organizational patterns have been introduced subsequently. There is, therefore, no longer any uniformity about the ministerial position of forestry. For instance, forestry in Nigeria was in the Ministry of Economic Development - Federal Department of Forest Research (1960-1968) - and more recently in other ministries where it has not only been accorded greater attention but has even been given priority.

Of the twenty instances of ministerial arrangements (see Annex 1), forestry has a dominant position only in five countries or States: Ghana and Kenya, and the East Central, Kano, and South Eastern States of Nigeria. It is also of interest to note that of these five countries, forestry is of crucial importance to local and national economies in two: Ghana, and the South-Eastern State of Nigeria. In other places such as Cameroon, Liberia and Mid-Western and Western States of Nigeria, where forestry makes substantial contributions to local and national economies, the role of the forestry departments within the overall ministerial framework is more limited. On the other hand, in some of the Nigerian States, such as in the Kano State and the South-Eastern State, the forest services are in a stronger position or completely independent, such as, for instance, the East-Central Forestry Commission.

Over the last ten years, several attempts have been made to overhaul the structure of forest administrations in Ghana, Liberia, and Nigeria. Although most of these attempts have so far not led to substantial modifications, they are nevertheless indications of the growing awareness of the potentialities of the forestry sector and of the need to strengthen the institutional position of forest administrations. Between 1965 and 1971, two attempts were made to undertake fundamental reorganizations of the Ghanaian forest service. Indeed, a Ministry of Forestry was established, which functioned for a short period in late 1965 and early 1966. Another effort was made in 1969 to revive the ministerial status of forestry or to create an executive Forestry Commission in its place. By 1971 the principal needs, functions, and the structural organization of a corporate development agency for forest resources (Forestry Commission) were outlined, but in the end the proposal failed to become accepted and the government had to suspend the reorganization. Forestry is now a department within the Ministry of Lands and Mineral Resources. The possibility of upgrading the status of the Liberian Bureau of Forestry has been under discussion for a few years. In 1974 it was discussed to institute a Ministry of Forestry or an autonomous forestry development authority. The proposal for restructuring the forest administration is at present under review and it appears that the establishment of a forestry development authority could be an acceptable solution.

Following the elections in the former Western Region of Nigeria in 1965, a Ministry of Forestry and Fisheries was created, but it did not take off the ground before the military take-over of government in 1966. The first Military Governor of the former Western Region set up a high-powered committee in May 1966 to report on forest policy and management practices in the region. The expert committee recommended a number of practical organizational improvements to the ministerial structure of the forest service, but the government finally chose to place an advisory commission between the CCF and the minister. Since the role of the commission is basically advisory and its advice is not mandatory on the actions of the minister, there has been little overall improvement in the status of the forest service. It is all the more remarkable that in some other parts of Nigeria where the forest estate is small and substantially less productive, such as in the East-Central and Kano States, there has been a marked improvement in the organizational strength of the forest services without any intensive expert enquiry with compelling recommendations. At federal level, a proposal for the creation of a National Forestry Commission was made in 1971; the state governments did not favour such a new body and the idea was subsequently dropped.

The departmental structure of forest services is more diverse than that of ministerial relationships. Some typical factors governing the creation of units within a forest service are: (a) tradition, i.e. the set-up during the colonial period; (b) development projects; (c) availability of foreign assistance; (d) existence of revenue loopholes, e.g. frequent evidence of illegal felling in Nigeria, necessitating the creation of log control units; (e) political pressure on the forest service; and (f) physical attributes of the country, e.g. problems of difficult terrain and accessibility in Kenya and Tanzania, compelling the creation of specialized road construction units. In most forest services the traditional branches of silviculture, working plans, general management, and utilization are represented. In the dynamic socio-economic circumstances of post-independence, other functions have necessarily assumed greater importance and are frequently accorded the status of branches. However, other critical units will need more attention, since they are essential for promoting the forestry potential in a competitive economic climate. They include those of planning and forestry economics, wood-processing industries, timber marketing, resource surveys, plantation techniques and tree-breeding, education and training, public relations and extension, research, personnel management and in-service training, logistics and stores, and administrative support.

There is no forest service that embraces all these branches or units (see Annex 2), mainly because there is a great shortage of qualified staff. Moreover, the creation of new branches may require the approval of extra-ministerial bodies such as the public service commissions, and these bodies are usually hesitant to establish the necessary number of technical sections. Consequently, the general pattern for most forest services has been to establish a few functionally cumbersome branches such as forest development and management, and policy and evaluation, in addition to being dependent upon other ministerial units for such functions as planning, extension and information, training, personnel and administrative support. However, this approach rarely meets the specific needs of the forestry sector.

In some countries there are no recognizable branches as such; there are only territorial ACFs and SACFs who communicate with two or three Conservators of Forests for advice on different matters. Thus, in most Nigerian state forest services, the headquarters staff comprises the CCF, the Deputy Chief Conservator of Forests (DCCF), and two or three Conservators of Forests (CF) as follows:

- DCCF : Staff matters, finance, economics, utilization, wildlife and parks, and project evaluation.
- CF (A): Silviculture, protection, extension services, sawmilling, forest exploitation, and stores.
- CF (B): Research, inventory, records, annual reports, policy and law, and revenue.
- CF (C): Log control.

In Kenya, the Conservators of Forests at the Headquarters are allotted the following functions:

- DCCF: : Staff matters and finance.
- Assistant CCF: World Bank plantation project.
- CF (I): Survey, inventory, management plans, School of Forestry, education and training.
- CF(II): Marketing, sawmill advisory service, forest engineering (prefabricated timber bridges), and road construction.

In Tanzania, a major restructuring of the entire public service was undertaken in 1972. The powers of the ministries were considerably decreased, while the regions were vested with substantial economic and political responsibilities. The result is that most ministries now handle a few national projects and concentrate on providing advice to regional development commissioners. In the case of the forest service, the senior officers at the headquarters handle the following tasks:

- Director of Forestry: Liaison with the Tanzania Wood Industries Corporation, and liaison with the Natural Resources Officers in regional administrations.
- Forest Officer : Sectoral planning section.
- Forest Officer : Forest development and management.
- Forest Officer : Research section.
- Forest Officer : Training section.
- Forest Officer : Survey and inventory section.
- Forest Officer : Bee-keeping section.

The Ghanaian forest service has the most impressive and development-oriented structure. In addition to the very strong territorial conservancies manned by experienced forest officers there are three specialist conservancies situated in different parts of the country and communicating with the CCF through two DCCFs:

- DCCF (I) : Staff matters, finance, training and education
- DCCF (II): Liaison with regional and specialist conservancies - records and information
- 4 CCFs : Regional conservators - management and development projects
- CF : Planning (situated at Kumasi)

- CF: Utilization (situated at Takoradi)
CF: School of Forestry (situated at Sunyani).

As may be seen from the summary table presented in Annex 2, plantation units are a favourite of forest services, thus illustrating a major policy trend. On the other hand, planning and economics units are few: most forest services have to rely on ministerial planning units, general information officers and common administrative support units. It is also most striking that little attention is paid to marketing, utilization, education and training, records and logistics, and, apparently, even less consideration is given to personnel management and in-service training.

OTHER GOVERNMENT OR PARA-STATAL BODIES

In addition to the national forest service, all countries have a number of other government bodies or para-statal organizations which carry out some specific forestry development activities. Among these organizations at least five types may be distinguished.

- (a) Those charged with the educational and training objectives, such as the university departments of forestry in Liberia, Nigeria and Tanzania, or the various technical forestry schools. Whereas the facilities for professional education generally depend on the Ministry of Education, the forestry schools are frequently under the supervision of the technical ministry and may be directly linked to the forest service. For example, in Cameroon, the School of Forestry in Mbalmayo and the Ecole de Faune in Garoua are organized under the authority of the Ministry of Agriculture and have close relationships with the Forestry Department. At the Ecole de Faune there is a consultative committee, with the Minister of Agriculture and the Minister of Animal Industries as chairman and vice-chairman, respectively.
- (b) Those established with the objective of investigating problems of forestry, forest products, and related matters. They include the Forestry and Forest Products Research Institute, Kumasi, Ghana, the Federal Department of Forest Research, Ibadan, Nigeria, the Forest Research Institute, Bertoua, Cameroon, and the East African Agricultural and Forestry Research Organization, Nairobi, Kenya. All these institutes are special bodies of ministries other than those embracing the forest services.
- (c) Those having the primary responsibility for marketing and for developing new markets and products such as the Ghana Timber Marketing Board, which is a statutory corporation under the Ministry of Trade.
- (d) Those concerned with, and established mainly for, undertaking reforestation programmes and other resource management activities. The Cameroon Fonds National Forestier et Piscicole is an example of this category. It has a board of governors and is under the supervision of the Ministry of Agriculture.
- (e) Those concerned with industrial development of the wood-processing sector such as the Tanzania Wood Industries Corporation.

It is difficult to categorize the type of forestry development functions vested in the Tanzanian Prime Minister (Regional Development Commission). The political and economic development of the regions is vested in Regional Development Directors who usually have Natural Resources Officers (NROs) on their staff. The NROs are not necessarily foresters by training, but may exercise important development responsibilities related to forestry. Since the delineation of national and regional functions is closely linked to political decisions, there is no doubt that the development objectives of forestry (and those of other natural resources) will have to take place within the framework of the general political development objectives.

There are also some private organizations which are in one way or the other involved in forestry development. Professional associations fall within this category, although there are as yet not many in Africa. The Forestry Association of Nigeria is probably one of the few examples on the continent. Membership is open not only to professional foresters, but to all interested in forestry. The association is quite active and makes positive contributions to forestry development generally. An interesting private organization which has been involved in Liberian forestry development is the Canadian and American Relief Everywhere (CARE). This agency assists the forest service in the budgetary and accounting procedures established for the execution of reforestation projects.

TABLE 5 contains a list of government bodies, para-statal organizations, and private agencies which are somehow related to forestry administration and sectoral development. Whilst the importance and role of these organizations vary considerably within the countries, they can undoubtedly make substantial contributions to sectoral development such as: (a) assistance to governments in arriving at the correct course of action; (b) provision of enlightened support and exposition of forestry's potentials during inter-sectoral debates; and (c) execution of certain specific tasks which could only be carried out with great difficulties through the existing forest service organization.

TABLE 5: Government bodies, and para-statal and private agencies related to forest administration

COUNTRY	GOVERNMENT BODIES OR PARA-STATAL AGENCIES	PRIVATE AGENCIES	
		INDUSTRIAL AND RESEARCH AGENCIES	OTHERS
Cameroon	(a) Fonds National Forestier et Piscicole (b) Forestry Research Institute, Bertoua (c) School of Agriculture (ENSA), University of Yaoundé	-	-
Ghana	(a) Ghana Timber Marketing Board (b) Forestry and Forest Products Research Institute, Kumasi	Ghana Timber Association	-
Kenya	East African Agricultural and Forestry Research Organization, Nairobi	-	-
Liberia	(a) Concessions Secretariat, Ministry of Finance (b) College of Agriculture and Forestry, University of Liberia, Monrovia	-	Canadian and American Relief Everywhere (CARE)
Nigeria	(a) National Forestry Development Committee (a Committee of all CCFs, Directors and Professors of Forestry, University of Ibadan) (b) Forest Research Institute, Ibadan (c) Department of Forest Resources Management, University of Ibadan	(a) Nigeria Timber Association (b) Western Nigeria Sawmillers' Association	Forestry Association of Nigeria
Tanzania	(a) Tanzania Wood Industries Corporation (TWICO) (b) Department of Forestry, University of Dar-es-Salaam (Morogoro) (c) East African Agricultural and Forestry Research Organization, Nairobi, Kenya	-	-

CHAPTER 3

DEVELOPMENT RESOURCES

This chapter reviews the role of forest land, forestry personnel and financial resources as they affect the organization and activities of national forest services. These three factors determine to a large extent the operational possibilities of forest administrations and their active contribution to national development strategies.

FOREST LAND

The composition of forest land, as summarized in TABLE 6, is of special interest from the point of view of magnitude and potentialities of the resource. In terms of forest land as a proportion of the total land surface, the Cameroon and Liberian forest services have enviable development bases. Apart from Kenya, the other forest services generally manage similar proportions of total land areas. There is a geographical distinction between the location of West African and East African forest resources. In West Africa, there is a more or less continuous belt of high forest along the coastal region from Liberia to Cameroon, with a progressively drier belt of savanna towards the Sahara desert. On the other hand, the forest estates of Kenya and Tanzania are concentrated in the moister interior parts, away from the drier coastal belt. The implications of this regional and national variation of the forest estate are that the coastal belt of West Africa and the hinterland of East Africa constitute the zone of conventional forestry activities, while in recent years forest services have had to give more attention to semi-arid areas, which led to an enlargement, albeit small, of forest resource and expertise.

The constitution of reserved forest lands was the primary and is still a major function of forest services. The foresters strove hard to obtain forest reserves in practically all types of vegetation. The result is that each country contains blocks of rich, moderately rich, poor and fairly poor forest reserves. However, the total area of forest reserves is not entirely indicative of the potentialities of forest resources. First, the existing forest reserves may only be part of the total surface still covered with forests or of land which eventually could best be used under tree cover. This is, for example, the case in Cameroon where the total forest land is presently estimated to be of the order of 30 million hectares, but where the constituted forest reserves cover only about 1.6 million hectares. Secondly, the quality of the forest cover within the forest reserves themselves varies considerably. For instance, although 10% of the area of Nigeria is constituted forest, it seems that only 2.03% of the country is covered by forests that are timber-producing; the remaining forests are either semi-productive, marginally productive, or do not produce timber at all. Also, to some extent, Kenya, whose total forest reserves represent less than 3% of the total land surface, has a resource base comparable to that of Nigeria. The quality of the resource base is also of special interest for forest estate expansion and regeneration programmes. Kenya has undertaken the largest plantation programme, thus considerably enlarging its resource base. The other countries have proportionally smaller areas of plantations of more recent origin (see TABLE 7).

In several countries, a further increase of the forest estate based on the principle of forest reservation is no longer popular or tenable. The next obvious course of action, therefore, is to make more use of existing forest land through a better utilization of the heterogeneous contents of the forests, introduction of intensive management techniques, and the conversion of the natural forest into a more valuable homogeneous crop. Thus, where the bulk of the forest estate is marginally productive, as in Nigeria, and where the total forest estate is inadequate for the growing population, as in Kenya, the forest services have had to resort to other means of building up the forest estate. In Nigeria, fairly

large areas of land are being purchased for establishing protection (shelterbelts, wind-breaks and mineland afforestation) and fuelwood plantations. Also in Kenya, between 1966 and 1972, 17,243 ha. were purchased for fuelwood afforestation schemes, while negotiations were in progress for the acquisition of 22,700 ha. for the same project.

TABLE 6: Composition of the forest land (1000 ha.)

Country	Mangrove	High Forest	Other Closed or Broken Forest	Savanna (West Africa) or Miombo Woodland and Open Grassland (East Africa)	Total Forest Land	High or Closed Forest as Percentage of Forest Land	Forest Land as Percentage of Total Land Area
Cameroon	-	17,500.0	-	12,500.0	30,000.0 ^{1/}	55.0	63.1
Ghana	-	1,550.4	-	666.9	2,217.3 ^{2/}	69.9	9.3
Kenya	45.1	937.8	-	680.5	1,663.4 ^{4/}	56.4	2.85
Liberia	-	2,387.7	2,468.6	-	4,856.3 ^{3/}	49.2	43.7
Nigeria	142.4	1,886.4	7,373.7	7,373.7	9,274.0 ^{4/}	20.3	10.0
Tanzania	80.1	-	899.5	12,106.1	13,085.7 ^{4/}	6.9	13.9

1/ Only about 1.6 million ha. has been reserved permanently so far.

2/ In addition, there are about 9.4 million ha. of unreserved forest or woodland.

3/ Of which about 1.6 million ha. is reserved as national forests.

4/ Not including unreserved forests and wooded areas on public land.

TABLE 7: Area of forest plantations

Country	Year	Hectares	Plantation as Percentage of Forest Estate
Cameroon	1974	7,000	0.01
Ghana	1974	44,326	1.9
Kenya	1972	132,490	7.9
Liberia	1972	5,980	0.12
Nigeria	1974	85,660	0.92
Tanzania	1974	55,000	0.42

Forest land ownership falls into three main categories: (a) ownership by national or state government; (b) communal or collective ownership; and (c) private ownership. These three types of ownership do not always exist at the same time in one and the same country; in some cases (as in Cameroon, Liberia and Tanzania), there is a dominant or exclusive ownership under the national government. Although Cameroon and Liberia recognize the possibility of communal ownership by local inhabitants, a large proportion of the forest estate is, in fact, considered as property of the State. In Tanzania, all forests are owned by the State. Kenya still has a small proportion of private forests. The future of these is most uncertain, since a great deal of forest destruction has taken place in the last 18 months to produce charcoal, particularly for the export markets in Hong Kong and in Arabian countries. If the government's seemingly passive attitude towards private forests and the indiscriminate exploitation by the owners continue, it is probable that the whole of the 141,000 ha. of private forests will have disappeared by 1985.

Ghana and Nigeria had strong indigenous kingdoms before British colonization, and hence it was difficult to build freehold forest estates. In Ghana, the entire forest estate is owned by traditional communities and management by the forest service. In Nigeria, about 85% of the forest estate is also owned by local communities; in the last seven years the problems of dual ownership and administration have largely been overcome by proper recognition of the rights of local communities to their heritage - rights to land - and by arrangements made to demonstrate the potentialities of forest resources in local economies.

Generally, the pattern of forest ownership does not present insurmountable problems. The question of who owns the forest estate - the State, the community or an individual - is probably less crucial than the question of how well it is managed by the owners or the national forest service. A great many adjustments and improvements are feasible in patterns of ownership through proven capability of forest services and beneficial management objectives (Adeyoju, 1975).

FORESTRY PERSONNEL

Usually there are three or four categories of forest service personnel, comprising: (a) forest officers (forest managers) with university training; (b) forest technicians with training in a school of forestry or equivalent institution; (c) the forest estate protection staff (e.g. forest guards); and (d) forest workers. In this study, the role of the first two groups, i.e. the professionals (forest officers) and the technicians, is given more attention largely because these groups contribute directly to the moulding of policy, plans, and project formulation, and also because they constitute the critical channels of decision-making and implementation. There is, of course, no uniformity of prerequisites for the different levels, nor is there any consistency in the classifications in vogue, not even between the English-speaking countries which shared similar experiences. Generally, the government employment agencies (i.e. the Public Service Commissions, or their equivalents) determine the qualifications and transitions between different levels of personnel. Annex 3 shows the terms and basic training requirements of different levels of personnel in each country.

Although training requirements are stipulated in the regulations, it is nevertheless possible in special circumstances that experienced and capable technicians, who have also attended a number of in-service training courses, are appointed to the grade of professional forest officer, as has happened in many Nigerian state forest services. Again, a frequent occurrence is the use of experienced forest technicians as district (professional) forest officers throughout the English-speaking countries. The main reason for this is the general shortage of professional staff, but it is of interest to note that, because of the generally high capability of experienced technicians at field stations, some GCFs prefer posting such officers to man important forest stations instead of deploying fresh or inexperienced ACFs on such tasks. Thus the job descriptions attached to different grades of forestry staff are flexible and can be adjusted to suit the manpower capabilities and needs of individual stations. However, there is a legal distinction between the roles of a substantive ACF in charge of a district and that of an experienced technician overseeing the pertinent affairs of a station. In some countries, the forest law confers on forest officers (i.e. ACFs and above)

the right to compound forest offences, to stop and inspect any vehicle carrying timber on highways, and also to visit and inspect the books of sawmillers. In the circumstances of a forest technician being deployed as a district forester, a government announcement in the gazette is made to empower him to undertake all legal duties of a forest officer. Similarly, when such a forest technician has been redeployed to duties other than those of a district forester, the extraneous powers invested in him are taken back through a government notice. An example of the distribution of major functions by administrative levels, as currently in practice in most English-speaking countries, is presented in TABLE 8.

TABLE 8: Functions of forestry personnel by administrative levels

Administrative Level	Typical Functions
Conservator of Forests (CF)	Normally in charge of a forestry region, supervising a number of ACFs and SACFs. He inspects and advises his subordinates on all aspects of forest activities. In some cases, a CF may head a specialist branch such as planning, utilization, training or research. Because of his experience and great responsibilities, the CF usually has direct access to the CCF.
Senior Assistant Conservator of Forests (SACF)	The duties of SACFs are similar to those of an ACF, except that the former is normally given a more responsible district. Occasionally an SACF may head a forestry region and supervise a number of ACFs in the districts.
Assistant Conservator of Forests (ACF)	Responsibility for running a forest district, execution of all forestry work including issuance of permits to remove individual trees, forest assessment, management and protection. He handles new projects. He also supervises technical and field staff. Liaison with members of the community. The ACFs' forest district is usually part of a forestry region or division.
Senior Forest Technician	Duties similar to those of a forest technician. He may, however, be given a specialist duty and be assisted by a number of junior technicians. He assists the ACF, SACF or CF in the practical aspects of forest survey, demarcation, silviculture, enumeration, protection, site preparation, nursery, plantation establishment, revenue collection, records and supervision of forest workers.

In addition to the various administrative levels, seniority grades are usually established within the different cadres, and in the case of a technician there are formal training programmes or requirements which must be fulfilled before he can be appointed as technical officer from the rank of senior forest ranger (in Ghana), as forest superintendent from assistant forest superintendent (in Nigeria), as technical officer from senior forester (in Kenya), or as forester from assistant forester (in Tanzania). These cleavages in technicians' training and career prospects are unique to each forest service.

In Cameroon, as in the other French-speaking African countries, there is a difference between the "Ingénieur des Eaux et Forêts" and the "Ingénieur des Travaux" or "Ingénieur des Techniques forestières". Both have attended university training courses for 3 and 5 years, respectively. But it is difficult to make a clear distinction between their functional responsibilities. The basic assumption is that the Ingénieurs des Eaux et Forêts are mainly concerned with conceptual and planning activities, whereas the Ingénieurs des Travaux are mainly responsible for the execution of field operations. Since both operational and con-

ceptual aspects are required for an efficient execution of forestry activities, this separation of the two functions seems to be rather artificial.

The aggregate strength and qualitative bases of forest services are critical capability factors which cannot be ignored. However, it should be remembered that the supply of recruits to the forest service is also a reflection of the general standards of education in the country. Thus, if the primary and secondary school systems are poorly developed, there may be some recruitment constraints for the forestry career which may be less attractive than other professional careers such as medicine, pharmacy, law and engineering.

The data presented in TABLE 9 reveal some shifts in the professional strength of forest services, particularly since independence. In fifteen years of independence, Cameroon has produced about 15 Ingénieurs des Eaux et Forêts and 13 Ingénieurs des Travaux: an average of one per year for each category. During the same period, Nigeria increased its professional capability with the addition of 313 forest officers. Since independence (1957), the number of African professionals in the Ghana forest service has risen from 6 to 33 in eighteen years, while Kenya has trained over 40 indigenous professional staff in twelve years. However, the situation in each country deserves more comments, since the availability of professional and technical staff within the public forest administration itself may be the result of complex factors. For instance, there are about 35 Tanzanian forest officers at present, but many of these men, and about 250 forest technicians, have been deployed to other national development agencies as a result of changing government policies. Also because of an increased effort to develop local wood transformation, about 40% of trained Ghanaian forest officers are now gainfully employed outside the forest service, with a large number moving into major forest industries in the last two or three years.

TABLE 9: Total of national professional foresters and forest technicians

Country	Year of Data	Forest Service		Forest Industries		Research		University Teachers
		Professionals	Technicians	Professionals	Technicians	Officers	Technicians	
Cameroon	1975	37(a)	170(b)	6(c)	25(c)	3	8	-
Ghana	1975	33	549	69(d)	747	22	67	-
Kenya	1974	42	138	6	26	-	-	-
Liberia	1975	21(e)	5	18(e)	9	-	-	5
Nigeria	1975	252	595	37	76	94	86	26
Tanzania	1975	26	380	5	22	-	-	6

Notes:

- (a) 24 Ingénieurs des Eaux et Forêts and 13 Ingénieurs des Travaux.
- (b) Comprising Adjoints Techniques and Contrôleurs.
- (c) An estimate.
- (d) Comprising largely forest industrial and marketing managers and utilization specialists.
- (e) Including the Assistant Minister and Foreign Aid Advisers.

In Liberia, where there has been a university department of forestry since 1955, the forest service has had serious difficulties in recruiting and retaining forest officers. This is a result of certain disincentives within the public services. In some other respects, the Liberian forest service is unique. Liberia is a country (probably one of the few in the world) that has a professional training institution without the support and complementarity of a technicians' training programme. In most countries, the reverse is the case.

Nigeria's relatively large number of forest officers is due to: (a) the state and federal responsibilities devolving from the fact that the country needs 14 forest services; (b) the existence of a strong university department of forestry since 1963; (c) the economic buoyancy of recent years, which has fostered large forestry projects throughout the country; and (d) the recruitment of university graduates with non-forestry qualifications for specialist branches of forest management, research, and development.

The degree of responsibility of professional officers in different countries may briefly be examined. In the six countries included in this study, the average district forest officer has approximately 350,000 ha. of forest land to develop. This figure can, of course, give only a very rough indication of the dimensions involved, since the actual workload varies greatly with the intensity of management and the productivity of the resources classified as forest land. Because between 30 and 35% of the professional forest officers in the countries under review are employed at headquarters, schools, regional offices and specialist branches (e.g. research and utilization where these branches are incorporated in the forest service), the African forester in the field has undoubtedly a considerable responsibility. The shortage of field staff and the wide range of activities imply that the reliance on the capability of the technicians is vital to management programmes. Thus in some countries, the ratio of professionals to technicians is 1:15 (in Tanzania) and 1:17 (in Ghana). There is no ideal structural staff ratio as yet, and the number of professionals in relation to that of available technicians is substantially smaller in the countries being studied than in most other parts of the world. However, since circumstances change rapidly in present times, the requirements of each forest service must continually be examined.

FOREST FINANCE

The comparison of forest finances of the different countries is less rewarding than the comparisons made with respect to forestry personnel. The reason is that it is somewhat difficult to find a common level for comparisons, since the financial resources and development priorities of governments vary a great deal. A meaningful basis for a comparative analysis could possibly be an assessment of proportional allocations from budgetary funds to forestry as related to the economic contributions of this sector to the national economy. However, a detailed exercise of this nature is beyond the scope of the present study and, in any case, the data for such a discussion are quite inadequate. Therefore, the objective of this part of the study will remain restricted to a review of the various types of financial inputs which the forest administrations of the various countries receive.

The most common source of finance to public forest services is the annual budgetary allocation. As a general observation it can be stated that forest administrations have so far rarely succeeded in getting budgetary funds commensurate with their wide range of responsibilities. This is even true of countries in which the forest departments are important revenue earners; their annual budgetary allocations are usually small and quite unrealistic compared with the programme of work necessary to sustain at least the income-yielding sub-sectors. Thus in Cameroon, for example, where timber is the third export item, the budgetary allocations to the Ministry of Agriculture over three financial years (1972/73 to 1975/76) averaged 3.8% of national aggregate. As shown in Annex 1 there are six departments in the Cameroon Ministry of Agriculture, and forestry is usually third or fourth in terms of ministerial tasks, coming after the Directorate of Agriculture, the Directorate of Rural Engineering, the Directorate of Rural Development, and the Central Division. Consequently, forestry's share of national annual budgets was generally of the order of 0.63 - 0.82%.

Forestry should be a rapidly growing sector of the Liberian economy and its contribution to gross domestic product (GDP) is expected to increase from 2.2 to 8%, and exports to grow from \$8 million to \$39 million (IBRD, 1974). Under a proper set of government policies, forestry and forest industries can play a vital role in the future development of Liberian economy. In the face of the expected levelling-off in the production of iron ore and rubber, at least in the medium term, a continued rapid expansion of timber exploitation over the next few years, combined with the establishment of sizeable timber-processing units, could play a key role in the future economic development of the country. In the long run, forest resources may thus constitute a permanent resource base for the development of an increasingly sophisticated wood-processing industry in Liberia, with the possible benefits of linkages for the rest of the economy. However, these prospects are not yet fully reflected in the budgetary allocations of the decision-makers in the Ministry of Agriculture. For instance, for the fiscal year 1974 the actual allocation to forestry was only \$445,000, representing 0.43% of the national budget, whereas during the same period revenue from forest concession fees, stumpage and export duties exceeded \$8 million or 7% of gross national receipts.

The Ghanaian economy is also heavily dependent on the fortunes of the forestry sector, particularly at the exploitation, processing and external marketing stages. Timber is now the most important foreign exchange earner; the largest foreign exchange contributor until 1972 was cocoa. The export of forest products increased rapidly and more than doubled in the period between 1965 and 1974. Forestry has thus had a strong positive gross effect on the balance of payment, and the forest industries account for about 18% of the total output value of all industries in the country. Nevertheless, the annual budgets are very small, ranging between 0.63 and 0.85% of total expenditure by the public sector. This situation limits the forest administration's capability of ensuring a rational use of the existing raw material and of developing the future resource base.

In the case of Kenya it is clear that forestry is only beginning to make small but increasing contributions to the national economy, largely as a result of the pulp and paper mill established in the last two years. Total allocation to the Kenyan Forestry Department in the financial year 1975/76 was about 70% of that of the Ministry of Natural Resources; but at the national level, forestry's budget amounted only to about 0.5%. The finances of the Tanzanian forest service have since 1972 been split into two parts: the one part being expended directly by the forest service, and the other part by the Prime Minister's Office which has responsibility for a large number of forestry projects of regional importance. Moreover, the government has substituted annual plans for annual budgetary exercises. The published annual plans show only capital expenditures, while no mention is made of the important and often large recurrent expenditures, as well as the major sources of revenue. However, for the fiscal year January to December 1970, total forestry revenue was TS 8,195,135, while expenditure amounted to TS 24,511,965. The interesting point is that forestry in Kenya and Tanzania is a consistent net-user of financial resources, whereas in the West African countries of Cameroon, Ghana and Liberia, the reverse is the case: forestry is an indispensable revenue provider, but receives only a very small proportion of the national budgetary allocations.

In the three States of Nigeria (Mid-western, South-eastern, and Western), forestry provides a substantial proportion of the resources for state programmes; in the other States, the situation is that of deficit financing. The annual allocations to forestry in Nigeria, which has a fairly large number of foresters and nuclei of forestry institutions, are small and rather insignificant: usually of the order of 1.02% nationally, although in some States the proportion may be as high as 2.3%.

In several African countries, the classification of the sources of revenue hardly ever gives due credit to national earnings from export and excise duties on forest products. If these two items were clearly recognized as contributions by the forestry sector to the national economy, the actual earnings from forestry might possibly get a better support in the discussions on the level of budgetary allocations and investment needs. In the present circumstances, in which usually some arbitrary factors are used to determine the magnitude of financial resources towards most sectors of the economy, forestry, as a long-term enterprise, tends to be rather neglected.

In addition to the funds from annual budgetary allocations, other means for financing development programmes have become more widespread during the last fifteen years. In the case of forestry, the following four procedures of funding operational projects may be identified:

- i) Development funds: periodic allocations tied to projects and being an integral part of national development efforts.
- ii) Forestry funds: funds set aside for non-specific but solely forestry development purposes and available for the implementation of projects as and when needed, e.g. the Ghana Forestry Improvement Fund and the Western State of Nigeria Forestry Trust Fund. (both established by legislative enactments).
- iii) Reforestation funds: set aside for a specific purpose, e.g. the Cameroon National Fund for Forestry 1973 and the Liberian Reforestation Finance 1974 (a statutory collection from concessionaires per exploited volume).
- iv) Other development funds: e.g. ad valorem 10% and 5% surcharge on FOB prices of export logs and sawnwood from Ghana, respectively. (This fund was instituted in 1974 in aid of the forest service development programme.)

Periodic development funds have increasingly become a tool for financing field activities of forest services. Nevertheless, the share of forestry in national development funds is still very limited, especially because of the general scarcity of financial resources of governments, but also because of failure to present convincing arguments in favour of the forestry case. Thus in the two countries with 5-year development plans (Kenya and Nigeria), the total allocation of resources to forestry, as summarized in TABLE 10, is hardly more than a token. In Nigeria, the allocation to forestry has fluctuated widely over three national plan periods, e.g. from 0.17% during the First National Development Plan 1962-68 to 0.67% during the Second National Development Plan 1970-74, and to 0.0055% during the current plan period. Although in real terms there are substantial allocations to a wide range of important forestry projects throughout the country, the fact that the country's development strategy now necessitates the establishment of capital-intensive industries such as iron and steel, petro-chemical and motor-assembly plants, and the introduction of numerous social and welfare projects (rural electrification, water supplies, universal primary education, improved medical services, urban housing, sewage, numerous technical and higher institutions of learning, etc.), has restricted the allocations to the forestry sector.

The various types of forestry development funds established in Cameroon, Ghana, Liberia and Nigeria have had only limited effects so far, since the release of such funds is not entirely at the discretion of the forest services concerned. In the case of periodic development budgeting, the forest service is usually a first casualty in times of shortage of funds. Consequently, the setting-up of forestry funds has been more of symbolic than of operational importance. In the case of the ad valorem tax instituted in 1974 on Ghanaian wood exports for the assistance of forest service development projects, no transfer of the funds by the Customs and Excise Department, which is the collector, had yet been effected by mid-1975.

Foreign assistance of one type or the other has been the source of finance for forestry development and has also acted as a stop-gap because of temporary or continuing shortages of national resources. Since independence, most countries have received foreign assistance in such fields as resource surveys, plantation establishment, strengthening and creation of institutions, training programmes, marketing, planning, and setting-up of industrial projects. TABLE 11 shows a list of recent projects supported by the bilateral and multilateral agencies. Kenya and Tanzania have a variety of projects supported by five international agencies, and in particular by CIDA, IDRC and NORAD. In addition, Kenya has received some technical assistance from Finland, Japan and New Zealand. On the other hand, most projects in the West African countries have been financed under UNDP programmes, although Liberia has had continuous support from Western Germany over the last fifteen years. However, in spite of the efforts of foreign donors, such assistance, if not fully integrated into the national development efforts, may nevertheless act either overtly or incidentally as a disincentive

TABLE 10: Planned investments in forestry: Kenya and Nigeria

KENYA (K£'000) 1973-78	1973-74	1974-75	1975-76	1976-77	1977-78	Total	Planned Forestry Develop- ment as Percent- age of National Total
Recurrent Expenditure	1,431	1,760	2,415	2,595	2,765	10,066	
Development Funds	<u>1,469.4</u>	<u>950</u>	<u>1,152</u>	<u>1,051.5</u>	<u>1,113.5</u>	<u>5,736.4</u>	
Total	2,900.4	2,710	3,567	3,646.5	3,878.5	15,802.4	
Estimated Foreign Aid	196.9	147.7	154	106.5	85.5	690.6	
Local Finance	2,703.5	2,562.3	3,413	3,540	3,793	16,011.8	0.013
NIGERIA (Naira) 1975-80	1975-76	1976-77	1977-78	1978-79	1979-80	Total	
State Governments	13,509,680	15,351,217	16,116,011	16,827,642	17,907,690	79,712,240	
Federal	<u>12,925,000</u>	<u>7,149,500</u>	<u>5,185,000</u>	<u>2,655,000</u>	<u>2,100,000</u>	<u>30,014,500</u>	
Total	26,434,680	22,500,717	21,301,011	19,482,642	20,007,690	109,726,740	

to the rapid emergence of truly indigenous forest administrations able to appraise their problems and take appropriate decisions.

TABLE 11: On-going and proposed forestry projects supported by UNDP/FAO, World Food Programme, CIDA, German Technical Assistance, World Bank, IDRC, NORAD, and SIDA, as at September 1973

Country	Cameroon	Ghana	Kenya	Liberia	Nigeria	Tanzania
Industry	x		x		x	x
Resource Survey	x			x	x	x
Plantation Establishment			x		x	x
Economics, Marketing, and Planning	x			x	x	x
Utilization	x	x	x	x		x
Research			x		x	x
Arid Zone Forestry			x		x	
Education and Training	x		x	x	x	x
Wildlife	x	x	x			x
Bee-keeping						x
Forest Fire			x			

Considering the foregoing sections of this chapter it can be stated that planned forestry development implies important decisions with regard to the right combinations of land, personnel and finance, all of which constitute the prerequisites of forestry, either as a profession, enterprise or discipline. These three elements are by and large inseparable, although with the availability of one, e.g. finance, it is possible to procure the other two in limited quantities. It should, however, be stressed that by far the most important of the development resources is the "forester", who possesses the skill with which to acquire, consolidate, and create new wealth out of the forest resources. It is the forester who in cases of inadequacy should be able to determine the appropriate combination of the available resources and find the new sources and inputs required for the development of the sector. Again, it is the forester who provides the resilience of forest administrations everywhere. Forestry cannot exist without foresters, and forestry is, indeed to a large extent, the vision of the foresters.

Forests are inseparable from land, and the present generation is its temporary custodian. The generality of traditional beliefs is that the present use of the land, the granting of timber harvesting rights, and forestry (including transfer and development) should not grossly impair the development possibilities of succeeding generations. Moreover, since the peoples of these countries are largely dependent upon peasant farming, it is natural that they should take keen interest in matters and activities which could possibly limit their supply of land and restrict their freedom of action. There is no doubt that adequate recognition of the needs of local communities and an integrated development policy which avoids conflicts at the local and the national level are an essential condition for obtaining the various resources that a strong, technically competent and efficient forest administration will require. To gain the confidence of both population and policy-makers, and to show how much forestry can contribute to the country's development is thus a challenge to forest services everywhere.

CHAPTER 4

MAJOR PROBLEMS AFFECTING PUBLIC FOREST ADMINISTRATIONS

Forestry problems are as old as the profession and enterprise, and their complexity is invariably a measure of the state of knowledge, since every economic or scientific breakthrough entails other imponderables (Adeyaju, 1974). The three aspects of tropical forestry which attracted a great deal of scientific interest during the early stages of forestry development were taxonomy, ecology and silviculture. The foresters toiled for years in order to establish the qualitative and quantitative bases of forest vegetation so that proposals could be made for its management. In spite of the numerous botanical, ecological, soil and other forestry research efforts based on diligent investigation, covering in some cases several decades, no generally applicable broad concept has yet emerged which would allow a rapid and accurate appraisal of the foundations for a sustained use of natural tropical forests.

The fact that every forest is a living individuality implies that there are bound to be inherent and unique problems which make it difficult to find the right answers and easy solutions of general applicability. Development constraints in forestry may thus be partly institutional and partly due to the nature of the resources concerned. On the whole, the institutional problems appear far more serious than those inherent to the resource. But, on the other hand, there may also be greater opportunities to solve institutional problems more rapidly, because institutions are man-made and therefore changeable. They can, in fact, be manipulated and modified through decisions on supplies of manpower and financial resources, exclusion or insertion of new functions, and promotion of new products or technologies. Such modifications will usually imply a comprehensive reorientation of the sectoral development strategy.

The following chapter therefore discusses some major aspects and problems which affect the public forest administrations at present, and which consequently may act as important constraints to forestry development.

HEADQUARTERS AND FIELD ACTIVITIES

The headquarters are often staffed with able and experienced men, while field stations are manned by relatively inexperienced forest officers. Thus the headquarters constitute a fortress of conceptual framework, while the field stations are the theatres of operation in which the execution lags somewhat behind. Moreover, the administrative linkages between the centre and the field are usually not firm enough to permit a smooth transition between the planning stage and operational activities, and the scarcity of experienced field staff is to a certain extent influenced by the general bureaucratic rules and the pyramidal structure of most organizations.

There is a rapidly increasing volume of workload for the average field forest officer (ACF) everywhere and his activities and working conditions may vary considerably. Some of the most critical factors affecting the apparent workload of an ACF pertain to the total geographical area of his territory, the size of the forest estate, the size of the plantation programme, the intensity of supervision of timber operators, the number of sub-stations, the quality and strength of technical staff, the infrastructural facilities within his district, and the distance from, and communication facilities with, his supervising office (i.e. the office of the Conservator of Forests). The latter point merits particular attention. In countries where infrastructural facilities are poor or non-existent, there is a possibility that communication between field officers and senior officers at headquarters or regional forestry stations is reduced to the barest minimum; field supervision through regular visits is totally discouraged and general meetings of field and senior officers throughout the country are seldom held.

In TABLE 12, major activities and working conditions in some selected field districts are compared, illustrating the strong variations that may exist. In Cameroon, for instance, the ACF (Douala) spends a great deal of his time collecting forest taxes, controlling the activities of forest concessionnaires, encouraging inland fishery projects (pisciculture) and seeing to it that sawmillers keep up-to-date records and do not process or export logs illegally. In spite of not being (administratively speaking) responsible for plantation programmes in the tropical high forest, - these come under the responsibility of a specialized reforestation agency (Fonds forestier) - the ACF has, in practice, to supervise the plantation projects, since acute staff shortages prevent the Reforestation Service from having its own personnel.

TABLE 12: Some aspects of the field activities of a typical ACF in charge of a forestry station

ACTIVITIES	CAMEROON	GHANA	KENYA	LIBERIA	NIGERIA	TANZANIA
Name of forestry station	Douala	Sunyani	Elburgon	Boni Hills	Ondo (Western State)	Meru, nr. Arusha
Area of existing plantation (has.)	not available	7,540	26,263	520	4,050	6,900
Present planting programme (has.)	not ACF's responsibility	100	2,800	480	950	353
Number of sub-stations to be supervised	4	3	13	5	5	3
Number of technicians	6	4	13	none	20	9
Number of protection staff	5	6	138	5	54	23
Furthest sub-station (km)	70	110	46	625	72	60
Average number of forest workers	30	70	1,800	310	1,600	130
Distance between ACF and his CF or Senior Field Officer (km)	608 (Yaounde)	140 (Kumasi)	53 (Nakuru)	65 (Monrovia)	50 (Akure)	546 (Dar-es-Salaam)
Post qualification of ACF (years)	5	5	18T*	15	8	15T*

* T = experienced technician

The activities of the Ghanaian and Nigerian ACFs are rather similar, except that the Ghanaian ACF is more concerned with such items as supervision of concessionnaires, silvicultural treatment of areas previously exploited, exploitation control, tree-marking prior to felling, assistance to sawmills, charcoal production, and issuing permits for the collection of minor forest produce. Although these matters are also within the purview of the Nigerian ACF, he tends, or is increasingly obliged, to pay less attention to them than his Ghanaian

counterpart; instead, he has to concentrate his activity more on plantation work. In general it appears that the Ghanaian ACF is still more concerned with the utilization of the natural high forest land based on systematic working plan prescriptions, while the activity of his Nigerian colleague concentrates to a greater extent on replacing the natural vegetation with regular growing stock for particular industries.

In Liberia, the Bomi Hills district forest officer heads the largest of the three forestry regions in Liberia; his functions extend over 40% of the total area of the country. His task is extremely difficult, since he has no qualified technical officer and his sub-stations are located at a distance of 625 km.

The ACFs of Kenya and Tanzania are traditionally concerned with plantation work, as the productivity of the natural forests is rather limited. However, the Tanzanian ACF attends to a considerably wider range of tasks than his Kenyan colleague. For instance, apart from the regular plantation work, the forest officer in Meru is also in charge of the important Northern Zone Forest Road Construction Unit supported by SIDA, and of the development of forest industries, i.e. timber harvesting, processing, seasoning, sales, and production of fence poles and charcoal. These activities are handled by specialized units within the Kenya Forestry Department. The Kenya forest officer is mainly concerned with the execution of the plantation programme. He is able to accomplish a high plantation target because he has 13 plantation establishment centres, with each centre being under a district forest officer and the ACF only 46 km away from the farthest sub-station.

A particular feature of the forest services in Kenya and Tanzania is the employment of capable technicians with long practical experience as district officers. Eleven of the 13 district forest stations within Elburgon Division are headed by technicians; the two other stations are being planned for the 1976 financial year and will most probably be manned by technicians. The only professional forest officer within the Elburgon Division qualified in 1974 and is at present assisting the technical forest officer. An important advantage of the Elburgon forest officer is that he is only at 53 km from his senior officer, from whom he can easily get advice and technical support, whereas, for example in the case of the forest officer in Meru, Tanzania, or in Douala, Cameroon, the senior officers are situated hundreds of kilometres away.

At the higher administrative levels in regional forestry offices, or within the central services, other problems exist. Forest officers employed in these positions may find it difficult to keep up their practical knowledge of the situation in the field, which would allow a pertinent appreciation of the problems. This is either because the headquarters staff have a continuous flow of requests and therefore tend to give stereotype answers to all types of problems, or because they are unable to undertake regular field trips and are thus not sufficiently familiar with the realities. Another reason may be that some officers never had an opportunity to acquire sufficient field experience because they happened to belong to the first generation of indigenous forest officers and had rapid promotions to headquarters positions. Consequently, there exists the danger of a widening gap between the headquarters and the field officers, who should look to headquarters staff for leadership and technical support. This observation is, however, not necessarily pertinent to the situation in every country under study.

Another problem results from the several specialized functions requiring considerable skill and knowledge which, due to staff shortages, certain headquarter officers may have to assume in addition to the large amount of administrative tasks in which they are already involved. Thus, a headquarter Conservator of Forests may not only be concerned with liaison duties between the DDF and the field officers, but also with coordinating departmental programmes with those of other public sectors.

On the whole, it demands a high degree of ability and efficiency to pilot successfully through inter- and intra-ministerial committees such matters which are very critical to the growth and image of the sector. The combination of technical and administrative functions, as they prevail in the activity of most headquarters staff, will consequently require of any officer who is promoted to a leading position in the administrative unit a solid fo-

forestry education and professional experience as well as a systematic preparation in general administration and management techniques.

STAFF DEVELOPMENT

Staff development in the forestry sector tends to be hampered by several general factors: (i) the fact that forestry as a discipline or profession has hardly been known to the general public nor to those who develop curricula for schools; (ii) the tendency of high school graduates to prefer some selected professions which enjoy high esteem in society plus the fact that forestry does not necessarily belong to the popular group of courses; and (iii) the fact that forestry implies to a large extent field activities and the possibility that the future professional may have to live - at least during part of his career - away from the major centres of the country. Consequently, forestry has until now only been marginally interesting to students at pre-university and pre-technical institution levels.

The shortage of forestry staff is also due to lack of appropriate educational institutions, particularly for professional personnel. There are at present only four professional institutions in tropical Africa in which students can take a full forestry course:

- the Department of Forest Resources Management of the University of Ibadan in Nigeria;
- the Department of Forestry within the University of Liberia;
- the Department of Forestry of the University of Makerere in Uganda; and
- the Department of Forestry of the University of Dar-es-Salaam in Tanzania.

There exists a fifth Forestry Department in N'Kolbisson, Cameroon, which is part of the Agricultural Institute and which has been designed to offer a combined agriculture and forestry course; but in practical terms, this department has been at the initial stage since 1972 and has not had any student enrolments yet for specialization in forestry. The whole problem of professional forestry education in Cameroon is under review, and the possibility is being examined to establish a forestry institute in N'Balmayo that offers a full forestry course.

Of the four forestry departments mentioned above, the Department of Forest Resources Management in Ibadan has developed during the last ten years into a thriving professional institution. The other three institutions in East Africa are of more recent origin and their impact on the supply of manpower is still rather limited. The Tanzanian institution is only two years old and is just beginning to establish the basic facilities for its training programme. The Liberian institution, which is in fact the oldest in tropical Africa, has had frequent staff changes and an unenviable rate of student drop-out. Over the past 16 years there has been an average of about 70-80% drop-out of registered students between Year 1 and Year 4 (final degree examination). On the whole, the institution still needs substantial strengthening in order to enable it to develop a strong programme and identity of its own after 20 years of existence (1955-75).

The training of technicians, protection staff, and forest workers is undertaken at national schools of forestry. Apart from Liberia, every country has a school, although there are problems relating to the availability of teaching staff, inadequate equipment, and poor facilities. In the English-speaking countries, a number of courses have been designed for the career development of technicians and professional staff.

In addition to the general shortage of staff there is also an increasing loss of qualified personnel to the forest industry and to institutions related to the forestry sector. The reasons for staff drift to other jobs are complex and largely due to personal preferences of attaining a higher salary sooner than is feasible in forest service positions. Ghana, Liberia and Tanzania are the three countries most affected by a high rate of staff departure from forest services after a comparatively short tenure. The reasons for this occurrence are similar, but more highly pronounced in Liberia than in Ghana. Some of the main causes of departure of qualified staff from the forest services are: (a) there seem to be no bright

prospects of promotion; (b) expansion programmes are held up by budgetary constraints; (c) there is no means of rewarding a hardworking forest officer without prejudicing the interests and expectations of his colleagues. In Liberia, the staff problems of the forest administration are aggravated by the lack of civil service procedure with regard to staff recruitment, development, benefits and entitlements.

In Tanzania, the present situation of forestry personnel is characterized by a shift of officers between various agencies in connection with the government policy of decentralizing the ministerial responsibilities in favour of regional administration. A large number of professionals of various types and categories was transferred to the regional administration. Altogether 9 professional foresters and over 250 technicians are now serving in the decentralized administration; these include the most senior and experienced staff. The present tendency is clearly to move additional professional staff to the regional administration which is expanding rapidly in all aspects.

An important factor in African public services in general is that they are no longer as competitive as they were during previous periods when governments were the chief sources of professional employment. The departure of expatriate staff created unprecedented employment opportunities for all grades of national staff. As it was noted in Chapter 1, the first African CCFs in Kenya and Tanzania reached top executive positions about three years after professional qualification. The next group of African professionals attained the rank of Conservator of Forests after 18 to 24 months. But not too long after independence there was a slackening momentum in the numbers of vacancies and rates of promotion. In Ghana, Kenya and Tanzania there is apparently very little age difference between the CCFs and their colleagues in the rank below. Thus it is now rather difficult for most Conservators of Forests in these three countries to earn a promotion or advancement in the next 10 to 14 years before reaching the age of compulsory retirement. The same can be said about promotion prospects for the officers in the lower ranks, whose chances of reaching the position of Conservator are also very limited. It is not surprising, therefore, that a good number of professional staff has the tendency to seek new jobs in the rapidly expanding sector of the wood-based industry which is usually in a position to pay higher salaries and grant more generous fringe benefits.

Generally, the departure of foresters to other activities should not be viewed as a loss to the country nor to the profession itself. First, they may be able to make significant contributions to national economic development in other fields, especially in the wood-processing industry. Secondly, the fact that a forester can hold the position of Governor of the National (Central) Bank of Liberia and be head of a leading business enterprise in the country, or can become a Managing Director of private Ghanaian shipping lines, of the Ghana Timber Marketing Board and of leading integrated wood-processing industries, or General Manager of the Tanzanian Wood Industrial Corporation and its subsidiaries, as well as Principal (Permanent) Secretary, a Regional Development Commissioner or Minister of Agriculture in Cameroon or Liberia and Managing Director of Kenya's largest integrated wood manufacturers, is a proof of the potential capabilities of foresters. These instances of successful foresters in rather unusual circumstances should nevertheless compel a concerted action which should lead to a more realistic assessment of trained manpower requirements, to an increase in the annual number of forestry graduates, and to the improvement of employment conditions of forest officers in the forest administration. Only such a combined effort will curtail the drift and ensure a net balance in favour of the Forestry Departments between the rates of recruitment and change-over of personnel to other activities.

The loss of forestry personnel to other sectors is much less in Nigeria than elsewhere. Indeed, the opposite is true in the Nigerian forest services. The Forestry Departments continue to recruit non-forestry graduates and arrange short but intensive introductory courses for such recruits. The presence of foresters with unconventional backgrounds has probably been of considerable value to Nigerian foresters. The number of professional, teaching and research personnel attracted to forestry from post-university studies of agriculture, botany, chemistry, economics, engineering, politics and sociology is steadily increasing. The cross-fertilization of ideas that these men generate may well lead to a fuller and more rewarding appreciation of forestry problems as well as foster the flow of the foresters' ideas to other fields.

SPECIAL BRANCHES

There are generally four main activities which are handled by special branches within the structure of forest administrations: technical forestry training, research, planning, and utilization. However, as it may be noted in Annex 2, not all forest services do necessarily have specialized branches for all these activities at the same time. In some countries (Cameroon, Ghana and Nigeria), research activities are entirely separated from the forest service.

The schools of forestry for technician training are special units of forest services in Ghana, Kenya and Tanzania. Also, the forest services in Ghana and Tanzania have their own planning branches. The "Planning" label of the Ghanaian branch, which has elaborate facilities, is slightly misleading, since about 90% of its resources and activities are geared to gathering and synthesizing management and inventory information and to preparing working plans; the branch lacks the participation of an economist and it is increasingly difficult to recruit one. The Tanzanian planning section is small with a staff of two, one of whom is a SIDA-contract officer.

The utilization branches are generally small, with the exception of the Ghanaian establishment at Takoradi which has considerable facilities complementary to those of the Forestry and Forest Products Research Institute in Kumasi. Tanzania has a wood utilization project at Moshi, while Cameroon and Liberia have received technical assistance from UNDP/FAO and have bilateral arrangements for the establishment of wood-processing demonstration units. Kenya has a small utilization branch which concentrates on the production of prefabricated timber bridges. In addition, there is the Kenya Forest Industrial Training Centre (FITC) at Nakuru. It was originally established as a training institute, but is in fact now operating as a factory for wooden frames and prefabricated housing components.

Only two of the 14 Nigerian forest services have managed to establish easily identifiable special units. The Federal Department of Forest Research has a large Utilization Division and a Schools and Education Division. It has two schools with an enrolment of about 420, and a plan to establish a Wildlife Training School as well as a Forest Mechanization Training School. The Federal Department of Forestry has a Planning Division, an Industries Division, a Wildlife Development Division, an Extension Division, and a Sawmill Training Centre. Only two of the state forest services have some form of research and utilization branch.

The problems of special branches are similar everywhere. They comprise: (a) lack of recognition of, and reward for, pertinent skills; (b) lack of promotion for qualified and reliable staff; and (c) lack of parity between forestry special branches and comparable units in other government agencies. These problems need not remain insurmountable but will require a new approach. At present, the forest services tend to deal with them in an ad hoc way only. They post the forest officers in and out of the special branches with little consideration for their individual abilities and potential contributions to programmes or experiments. In fact, officers who have been trained specially for research, planning, utilization, and education activities over a period of years and at great expense may be subject to general transfers at any given moment. The result is that there is little continuity in the approach and methodology chosen in order to solve a specific problem. The specialist's training is only little used; and, in general, forest officers tend to regard placements in schools, research stations or utilization branches rather as an evidence of disaffection from the headquarters instead of as a chance to acquire some additional experience. It was stressed, for instance, that teachers in several schools (except in those of Nigeria) usually spend part of their time trying to organize their transfer back to general forestry stations. The Sunyani Forestry School in Ghana, where there has been a vacant position of a Forestry Education Officer for ten years, may be cited as an example of the difficulties of filling positions in specialized units. The basic qualification for this position is a B.Sc. (natural sciences), and the three universities in the country turn out hundreds of science graduates every year.

The situation in the special branches of the two Nigerian forest services which have science graduates is quite different, because they are much more specialized in intent and

purpose than elsewhere. On recruitment into the Federal Department of Forest Research (which embraces the schools of forestry) there is no competition with regard to the extra resources and fringe benefits which constitute a differential between the net earnings of, for example, a Ghanaian, Kenyan or Tanzanian forestry research officer or school teacher and his colleague who is stationed at a general forestry station. The Nigerian school of forestry teacher and his research, planning and utilization branch counterparts, either in the Federal Department of Forest Research or in the Federal Department of Forestry, get their promotions as and when they are due without the necessity to move to other jobs in the department.

One of the explanations for the apparent difficulties of special branches is that the forest officers assigned to them cannot easily earn promotion and advancement within such small units; and the opinion prevails within the administration as a whole that the forestry personnel should move around in order to afford them an overall view of forestry problems. Thus there are continual changes in school personnel, promising research projects are abandoned midway, new ones are initiated with new research officers, and reputable silviculturists, pathologists, industrial training and utilization officers and other specialized staff are deployed from time to time throughout the country to start life all over as general forest officers. This practice, especially if based on a short rotation cycle for the sake of promoting individual officers, may lead to loss of efficiency and productivity of the forestry personnel. Since specialized branches, staffed with highly qualified officers, are indispensable for an efficient forest administration, their personnel policy problems will require much more attention.

COORDINATION

Problems of coordination within national forest administrations may arise for such reasons as: (a) the existence of different legal systems and administrative patterns within a country and the need to harmonize them, as in the case of Cameroon; (b) constitutional division of responsibility for resource development in federations, so that local authorities as well as state and federal governments can try to develop the same resource in some way or another (as in Nigeria); (c) the existence of closely related resource development functions within two or more ministries; and (d) different management approaches to which forestry personnel has been exposed during training programmes undertaken in vastly dissimilar economies. The following are examples of coordination problems that may arise in public forest administrations.

Different legal and administrative patterns in Cameroon: The present political, social and economic system of this country is in many aspects still based on the co-existence of former British- and French-influenced institutions which have been operative in different parts of the country for 40 years before independence and 12 years afterwards (1920-72). In 1972, the federal status of the country was abolished together with the erstwhile separate legal and administrative institutions. Since then, the public services, laws and policies have been unified, but it is of course not an easy task to coordinate in practice the deep-rooted principles and attitudes of the two distinct systems. Briefly, three difficulties in harmonising the various aspects of forest administrations may be mentioned:

- (a) Problems arise from determining equivalent ranks between professional graduates trained in the United Kingdom, U.S.A., Canada, U.S.S.R., and Nigeria and those trained in France. Thus the grade of "Ingénieur des Eaux et Forêts" has been restricted so far to holders of a M.Sc. degree from the English-speaking institutions; the reason is that in France an Ingénieur des Eaux et Forêts spends five years in a university (the first three years in general agriculture and the last two in forestry and inland fisheries) before graduating. The same length of time may be spent completing the combined courses leading to the degrees of B.Sc. and M.Sc. Consequently, the holders of a B.Sc. degree in forestry who have had a shorter university cycle are actually considered to be at a level equivalent to that of the "Ingénieur des Travaux des Eaux et Forêts". The English-speaking forestry staff of all grades are unhappy about this classification. The irony

of the situation is that an officer who may have spent five years to obtain the B.Sc. degree has a chance to be classified as "Ingénieur des Eaux et Forêts", while his colleague, who got through the same course in three years and returned home two years before him, is classified as "Ingénieur des Travaux des Eaux et Forêts".

- (b) Within the present administrative system there are no promotional levels for the same job profile; once an Ingénieur des Eaux et Forêts or Ingénieur des Travaux des Eaux et Forêts, the officer remains in the same clearly defined salary scale. On the other hand, there are additional allowances and perquisites attached to different posts of, say, Director, head of service, provincial/divisional/district delegate, and provincial/divisional/district forest officer. Civil servants are consequently greatly interested in being appointed heads of a unit, whether big or small, since such an appointment may entitle them to additional income and benefits. The result is a strong tendency to create new posts, services, and branches in lieu of regular promotion grades.
- (c) The training of professionals is a particularly delicate issue at present, since educational patterns will to some extent also determine the future structure of the forest administration itself. The French-influenced system has a rather distinct and seemingly unreconcilable separation between the "conception" and "execution" stages of development programmes in general. On the other hand, the English-speaking countries have always tried to synthesize the two stages by producing a more practical professional forester. The continuing adherence to the separation of the conceptual from the operational aspects in the emergence of a professional forester is even more difficult to understand when it is remembered that the French-trained professional spends only two years studying three different subjects - forestry, inland fisheries, and wildlife - which are usually independent disciplines in English-speaking universities. Since the system lacks post-graduate or advanced and in-service training schemes, there is the danger that the Ingénieur des Eaux et Forêts et des Chasses will most likely find himself in the position of a general practitioner. It appears that a clear concept of what type of training programme would best suit the development of the forestry sector is urgently required. The proposed professional course at the newly created Department of Forestry within the Agriculture Institute is designed entirely according to the French tradition. But more recent information indicates that the whole problem of professional education is under review. In the meantime, only two French-speaking students are undergoing forestry training abroad (i.e. in France), while the Cameroon students at the University of Ibadan, Nigeria, are not given financial assistance by the government because they have not passed the national examination through which students are selected for university training.

Constitutional division of responsibilities for resource management in Nigeria: The situation in Nigeria is different from many other African countries in that there is a Federal Constitution which guarantees state responsibility for the development of all renewable natural resources. In 1952, the Federal Constitution was adopted, leading to the creation of four forest services out of the erstwhile Nigerian Forestry Department: Eastern, Northern, and Western Regional Forest Services and the Federal Department of Forest Research. At independence in 1960 there were three regional forest services and one Federal Department of Forest Research. In 1963 the Midwestern Region was created and the number of forest services stood at 5 until 1967. In that year the four political regions were replaced by 12 States and the number of forest services increased to 13 (12 state and one federal forest services). In 1970, the Federal Government assumed greater financial and overall development responsibility for agriculture and natural resources: a new Federal Department of Forestry was then created. At present, the situation is as follows:

12 state forest services: responsible for the day-to-day management of the forest estate.

1 Federal Department of Forestry: coordination of national policy; national projects; external relations.

1 Federal Department of
Forest Research (Institute of
Forest Research):

Basic and applied investigations of forestry and
forestry-related problems throughout the country.

The interaction of various forest administrations creates problems due to: (i) differences in forest laws of the various States, and (ii) participation of state and federal governments in forestry development projects. There are, for instance, frequent occurrences of logs being illegally taken from one State for processing in another State, or conflicts between States over the sharing of export duties collected on wood products at different ports. Another important management problem often arises with regard to the prevention and control of fire, as well as in connection with the activities of poachers in the forest estate between adjacent States. Since 1970, the Federal Government has made large sums of money available for state development programmes through the Federal Department of Forestry. In intricate issue has been the supervision of projects supported by the Federal Government, particularly because the States are the constitutional managing agents of the forest estate. On the other hand, the state forest services are anxious to secure federal assistance, but at the same time they are most reluctant to be accountable in any way for conceding a supervisory role to the Federal Department of Forestry.

Responsibilities of different government agencies in Ghana: An important problem of coordination arises between the Forestry Department and the Lands Department with regard to the granting of forest concessions. At present, the Lands Department has the power to grant or cancel forest concessions; the role of the Forestry Department is only advisory. This arrangement poses certain problems; the evaluation of the technical competence of prospective timber operators ought to be the responsibility of the Forestry Department, although the Lands Department, representing the interests of traditional land owners, should be consulted.

Personnel with a different educational background: Most countries have a certain number of professionals who were trained in Western Europe, North America and Australia. Cameroon, Kenya and Tanzania have one or two officers each, who studied in the U.S.S.R.. Ghana, Kenya and Nigeria have mainly taken advantage of the Commonwealth Scholarship Scheme for post-graduate training in Australia and Canada; a few officers from these three countries have studied in the U.S.A.. Liberia's historic association with the U.S.A. has fostered a programme of short courses and visits of Liberian foresters to relevant training institutions in the U.S.A. and Puerto Rico. The presence of a large number of officers with divergent training backgrounds among the forestry personnel has some advantages, but may create problems with regard to staff orientation and development.

FINANCIAL PROCEDURES

The size of financial allocation to forestry in any given economy is dependent on a number of variable factors such as: (i) the general appreciation of the present and potential role of forestry; (ii) the planning and operational capability and perspective of the forest administration; (iii) the various commitments of the government and their order of priority; and (iv) the aggregate financial resources available to the public sector. At present, the structural positions of forest services in respective ministries usually do not permit foresters to participate in budget debates at higher levels. The forest services make proposals to ministerial finance committees and are not directly represented at the crucial budget committee meetings in the Ministries of Finance and of Economic Planning. The forest services have consequently only a rather limited influence when the priority ranking of sectoral and sub-sectoral development projects is discussed; this is the situation particularly in those countries where forestry does not belong to the group of major ministerial departments.

But it is not only the scarcity of available budgetary funds, but also certain administrative procedures in the expenditure of such funds which may seriously impair the efficiency of the field operations of forest services. Some of the major difficulties experienced due to the rigidity of general budgetary procedures are: (i) in most countries, the release

of approved annual funds on a quarterly basis restricts the operational activities which are usually not evenly distributed throughout the year; (ii) planned expenditure for already on-going field operations are suddenly overruled by ministerial accountants or Treasury officials; (iii) site preparation and planting of seedlings cannot be undertaken during the critical months because the wages of labourers have been outstanding for quite long periods; (iv) tending operations are neglected owing to dearth of funds; (v) essential equipment and facilities in strategic forestry stations are lacking; and (vi) transport claims of staff have remained unpaid for a long time. But perhaps the most important difficulty results from the fact that periodic development allocations for planned forestry investments cannot be guaranteed. This point is particularly critical, since the rational use and the development of forest resources has to be based on long-term planning considerations; frequent interruptions in the investment flow mean consequently a severe hardship and loss of benefits for future generations.

Even the existence of periodical development plans and capital may not resolve these difficulties entirely. At present, two main attributes distinguish the periodic plans from traditional annual budgets. One is the indication of individual projects within each sector; the other is the additional capital investments forecast for each year. Since planned investments are tied to the subsequent annual budgets, the advantage of periodic plans is considerably reduced. As an alternative, a more global financing scheme, such as the establishment of forestry development funds would be more appropriate for forestry field operation projects. The main advantage of such specialized funds is that at the beginning of each plan period, the approved forestry budget can be set aside in a separate account which is free from cumbersome treasury instructions. Several countries have adopted this kind of arrangement to finance at least part of the operations of forest services and have thus acknowledged that - at least as a matter of principle and because of the long-term gestation periods - in view of the need for perspective planning and the vagaries of unforeseen natural events, the forest services require a greater flexibility and consistency than can be obtained by annual budgetary procedures. The establishment of forestry funds or similar arrangements does not confer a sacrosanct status to forestry. The vote for such funds is a part of national development programmes and their expenditure is usually subject to regular audit.

Allied to the problem of uncoordinated or irregular flow of funds is that of the inadequacy of allocations for necessary follow-up investments. This is a crucial point in the efficiency of forest management and reforestation operations. A common experience with forest plantations is that establishment costs were provided, but maintenance costs were not available: the benefits of the initial outlay are thus imperilled. It has been estimated that in the Western State of Nigeria, for example, the proportion of acreage loss due to lack of funds for tending operations in a teak plantation during the first 20 years is approximately of the order of 5:1 (Adesoyu, 1975). Apart from the probable financial loss on replacement, the cumulative loss in respect of timber quality production and slower rates of growth are far more consequential.

Two methods evolved under differing conditions may be considered for improving capital supply functions in African forestry development. The first method is termed a limited liability budget which, when applied, raises the absolute level of benefits over costs at which economic investment opportunities are rejected. The method has been analyzed in detail under various budgetary restraints of water resource development. It is of special relevance to forestry development because the economic arguments favour the plantation programme. The other method has been recommended for industrial departments which form part of ministries involved in major economic activities of government. This financial management device is referred to as accountability in relation to work performance. Under this system, funds are allocated according to the work units to be accomplished. This, in turn, leads to accounting in terms of unit costs: a project is budgeted as a combination of separate units, and their costs can be seen and watched. The special advantage of this method is that forest services would not only be responsible for handling their resources, but they would also be encouraged to behave in such a way that they do as much as possible as well as possible with the available financial resources.

OTHER PROBLEMS

In addition to the major problems that have been reviewed there are miscellaneous ones which may appear secondary at first glance, but which nevertheless represent important constraints to the effectiveness of forest services. They are, of course, problems which affect all public services to varying degrees, but it is important that each sectoral administration be aware of their impact and try to find solutions. Some forestry departments have lived with them for so long that they may be inclined to regard them no longer as obstacles to efficient administration; indeed, some foresters take them as normal and thus tend to concentrate on the larger and far more complicated issues only. Problems of this kind may have arisen due to:

- crowded office accommodation and/or lack of facilities;
- obsolete or inadequate equipment, teaching and practical demonstration aids, and inappropriate technology (e.g. outdated books for schools of forestry, inadequate tools for plantation, thinnings and pruning, etc.);
- inflexibility of logistics and stores handled for the whole ministry;
- delays in the repair of vehicles at the maintenance unit of the Ministry of Works;
- obligatory reliance on the Ministry of Works for construction work and for various supplies.

These problems and others that have not been cited are generally caused by the fact that the earlier concept of public institutions did not envisage a rapid economic development in which numerous growth points could flourish to the advantage of national economies. Thus the convenience of a government agency such as the Ministry of Works being an omnibus supply, construction, and maintenance department had specific attractions, particularly at a time when aggregate government programmes and activities constituted a small fraction of present day commitments. However, it is worth remembering that the original organizational structures, and the economic growth which has subsequently overwhelmed them, are all the handiwork of a series of agents, i.e. the human beings who design and operate institutions generating development or redevelopment. It is the agents for whom institutions are designed who should judge when such institutions have become retrogressive and take appropriate steps to evolve a new set of structural relationships that are capable of fostering maximum contributions to economic progress. In these circumstances there is no doubt a challenge for the forester, who at all times remains the principal judge, assessor, and pillar of the operational framework for forestry sector development.

SUMMARY AND CONCLUSIONS

During the European rule of Africa, the forest services were principally concerned with the delimitation of a permanent forest estate, usually a fixed proportion of the country's total land surface; they paid much attention to evolving suitable legislation for a national forest reservation policy. Priority attention was given to timber as the main forest produce, while many other resources were regarded as minor forest produce. The foresters also recognized the varying flora and fauna of the forest estate and therefore worked out different sets of legislation for their preservation and future utilization in the national interests. Although there were forest policies or elements thereof, the policies were largely sectoral and little related to the needs of other land-use sectors. There was hardly any information about the national economy, and the relevance of forestry to economic development was largely conjectural. Moreover, forestry and other departments existed as separate entities until the eve of independence, when many departments were amalgamated into a few ministries.

Since independence, the functions of the African forestry administrations have changed and broadened. Unlike to previous periods when the forester was predominantly concerned with silviculture and the control of timber licences, he now has to weld the traditional approach to a more dynamic attitude towards development. The present governments are con-

cerned with the creation of new wealth, jobs, and resource exploitation primarily for the benefits of local economies; with a diversified rather than a single crop economy; with infrastructure for purposes of internal development rather than for communication with the erstwhile metropolitan countries; in short, with innovation rather than with conservation.

The rapid socio-economic change has not been commensurate with institutional appraisal or improvement. Many forest services continue to discharge their duties as minor departments in the Ministries of Agriculture or Natural Resources, where they are often dwarfed, starved of resources and disenchanted. Forestry is often denied recognition for all its vital contributions. While it is generally a major or principal foreign exchange earner, its budgetary allocations are in most cases a mere fraction of its requirements and of the contributions it generates to national economies. Yet, forest services are increasingly called upon to provide additional goods and services to the ever growing members of both rural and urban communities.

Shortly before and after independence, there was an exodus of expatriate forest officers, leading to a near collapse of some forest services. Over the years, the situation has improved only slightly. More indigenous professional staff have been trained largely in Europe, North America, USSR, and Australia; there is still a lack of institutions for the training of forest managers, especially forest professionals, within the African countries. Some important specialized fields of forest administrations, such as planning and economics, resource survey, trade and industry, plantation establishment, education and training, research, records, extension and personnel management, are either non-existent, poorly staffed or not easily identifiable within the few existing units. In other countries, where more professionals have been trained, career opportunities have been severely limited within 8 or 10 years of independence, with the result that forest officers are leaving for better jobs in related industries and institutions, thus impoverishing the forest services concerned. The basic development resources for the administration, especially personnel and finance, are consequently inadequate for realizing the pertinent forestry programme.

Because it is inseparable from land which is fundamental to peasant economy, the forestry sector continues to attract a great deal of political debate. Forestry requires in most countries an organizational emancipation from the dominant but basically advisory agricultural departments in the ministry, and an internal restructuring in order to (a) solve both old and new problems, and (b) generate with minimum strain and stress the contributions so vital to national economies.

When societies change, the problems which they face also tend to change in both substance and intensity, just as the organization and methods by which societies are assisted to be able to cope with their problems must be expected to change. National independence coincides with an era of changing state philosophy in which the positive role of the State must be nation-building, using all the national and international resources which the wielders of new power can command. Planned development imposes new demands on public administration; it increases the need for a capability to undertake multiple tasks involved in formulating and executing national plans, programmes and projects. Despite these needs for change, most developing countries show a remarkably high degree of historical continuity in administrative patterns, practice and behaviour. Occasionally, new dimensions and aspects were added to prevailing systems. But basically, civil service practices, patterns of field administration, and general administrative behaviour continue to be influenced by ideas and practices introduced many decades ago.

There is no end to the weaknesses which have been attributed to economic management and public administration in developing countries. Many attempts have been made to relate these weaknesses to organizational structure, constitutional competence, integrity and adequacy of personnel systems, and administrative processes. More recently, however, problems of implementation and assessment capability of integrating planning, budgetary and operational processes, and management of public enterprises have also come to the fore. Thus increased attention is being paid to organizational obstacles in public administrations in general, ranging from problems related to the creation of new organizations for performing emerging functions to rationalization of existing structures for achieving better results. The weaknesses

of administrative systems arising from confusion over functions and responsibilities of different units, lack of coordination, excessive centralization, and generally inadequate arrangements for administration of the assigned functions are scrutinized more closely. The pace of economic progress, including the growing importance of forestry and forest industries, should provide the much needed impulse for changes within the public forest administrations.

During the last few years, different steps have been taken to increase the capability of forest administrations. In certain countries legislation has been enacted with a view to rationalizing the quantity and value of forest product exports in order to provide incentives for national participation in wood-based industries, and for the general improvement of the sector in the light of a changing economic climate. Other countries have instituted different agencies and quasi-government organizations specifically for the marketing of forest produce, for industrial development, for staff training at different levels, for regeneration programmes, and for research and investigation of related problems. In a few countries, some traditionally secondary or tertiary functions became so specialized that it was expedient to create entirely new and parallel services for such functions; the Wildlife, Game and National Parks Departments of certain East and Central African countries are obvious examples. Moreover, attempts have been made in some countries to replace the forest services with entirely new, and possibly more functional, structures. Although the various attempts seem to have been frustrated by political changes at the nick of time or by other circumstances, they are nevertheless indications of a growing awareness of the institutional constraints of forestry development.

On the whole, there is a general reluctance on the part of most governments to undertake any radical reorganization; only minor additions and modifications have been made to the original system. The most important reasons for the continuation of the status quo are probably the high financial and organizational costs involved and the absence of any well-tested alternative system to copy. To this must be added the inevitable time lag between the realization of the deficiencies of an existing system and the introduction of appropriate remedial measures.

There is, of course, no ideal structural model that will work equally well everywhere. Various considerations must guide the authorities: (a) the relative importance of the forest for the development of rural areas and for the national economy as a whole; (b) the specific national development objectives with regard to employment, industrialization, improvement of the standard of living in rural areas, and environmental protection; (c) the extent of population pressure on the forest estate; the kind of organization which suits a country with abundant forest resources and a small population will not suit a country with limited forest resources and a large population; and (d) the available resources for the implementation of specific policy objectives. It is thus possible to envisage reorganizations that will enable forestry to be: (i) constituted into a separate ministry with full responsibilities for forestry and forest industry development programmes; (ii) accorded the status of a corporation with a business-oriented character; (iii) retained in the traditional ministry but afforded a degree of autonomy under an advisory forestry commission or board; and (iv) granted to have access to development funds outside the regular budget for a period of some years for selective critical programmes (King, 1969).

Several variants of these structural reforms have been introduced or are being proposed in many countries. The essential point, however, is that realism and respect for efficiency should be the overriding factor in the selection of new structures rather than doctrinaire preferences or prestige values. The major argument for a new approach stems clearly from the observation that the actual forestry administration, with all its budgetary and functional constraints, is normally not sufficiently suited to exercise its managerial functions, to adopt itself rapidly to changing conditions, to take full advantage of technological progress and to react to changes in the relative costs of forestry inputs. There is much to be said in favour of having at the national level an organic framework through which all government actions, from the growing and harvesting of trees to the commercialization of the finished product, can be coordinated and harmonised with national objectives.

A new structural status for public forest administrations is only one possible improvement; another desirable improvement would be the creation of specialist branches such as planning, research, education and training, marketing and statistics, project analysis, records and public relations. Some forest services have a few of these units, but where they exist they are largely manned by officers with general forestry training only. In other countries where efforts are made to train specialists, these have frequently been assigned to carry out tasks which are unrelated to their training. The common explanation for the transfer of specialists to general foresters' posts is that the specialists cannot easily be promoted in small units when promotion is due. There are, of course, feasible solutions to the problem without creating inefficiency and low productivity as a result of changing staff for the sake of promotion. But in the present circumstances, there is a great deal of frustration due to (a) lack of job satisfaction; and (b) lack of parity and relativity in the evaluation of special forestry skills and expertise compared with other sectors.

The overall impression is that there is no systematic planning for forestry, forest administrations and staff development. Present efforts are markedly ad hoc and unsustained; forestry's competitiveness for development resources and relevance to national economies are largely undemonstrated and ignored.

Perhaps the most pervading shortcoming of forest services in the countries under study is the inadequacy of managerial experience. This deficiency is, of course, typical also for many other economic sectors of developing countries. That is why several governments have endeavoured to establish a series of institutes for formal instruction in public administration and finance, business management, and development administration. Many of these institutes are fully integrated with universities with specializations leading to academic degrees, while others are essentially oriented to the needs of industries. Generally, the forest services have made little or no use of the opportunities and facilities of such institutes, although other professional departments request and obtain management courses for their senior staff members. The continuing neglect by foresters to obtain the much needed management expertise would be harmful to their long-term cause.

Whatever modern administrative and managerial tools are employed, the critical factor is attitude. In all aspects of public administration in developing countries there is a real need for the civil servants, including foresters, to develop a new professionalism in which the efficiency of their management and the quality of their planning should be paramount considerations. For foresters to do otherwise would be a gross disservice to their profession and to themselves. Indeed, the inescapable long-term attributes of their vocation compel additional efforts on their part to explain steadfastly the difficulties of forest resource management and the requirements for a better performance of public forest administrations.

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THE MINISTERIAL ORGANIZATION OF FOREST SERVICES

COUNTRY	NAME OF MINISTRY	DIVISIONS/DEPARTMENTS OTHER THAN FORESTRY	APPARENTLY DOMINANT DIVISION/DEPARTMENT
CAMEROON	Ministry of Agriculture	Agriculture; Agricultural Engineering; Cooperatives; Rural Development and Central Division; and General Administration	Agricultural Engineering
GHANA	Ministry of Lands and Mineral Resources	Lands; Wildlife; Parks and Gardens; and Mines	Forestry
	An institute of the Council for Scientific and Industrial Research	There are 8 other research institutes relating to crops, water resources, soils, animal resources, building, industrial and food production	Crops and Food Research Institutes
KENYA	Ministry of Natural Resources	Fisheries; and Mines	Forestry
LIBERIA	Ministry of Agriculture	Technical Services; Planning and Administration	Technical Services
NIGERIA (States)	Ministry of Natural Resources	Agricultural Extension; Livestock; and Fisheries	Agricultural Extension
Benne/Plateau	Ministry of Natural Resources	Agricultural Extension; Livestock; and Fisheries	Agricultural Extension
East-Central	Forestry Commission	None, but for purposes of representation at State Cabinet meetings, the Minister of Agricultural Production presents forestry papers	Practically the status of a Ministry
Kano	Ministry of Community Development, Forestry and Cooperatives	Community Development; and Cooperatives	Forestry
Kwara	Ministry of Natural Resources	Agricultural Extension; Veterinary; Produce Inspection; and Fisheries	Agricultural Extension
Lagos	Ministry of Agriculture and Natural Resources	Agricultural Extension; Livestock; and Fisheries	Agricultural Extension

COUNTRY	NAME OF MINISTRY	DIVISIONS/DEPARTMENTS OTHER THAN FORESTRY	APPARENTLY DOMINANT DIVISION/DEPARTMENT
(Nigeria, cont.) Mid-Western	Ministry of Agriculture and Natural Resources	Agricultural Extension; Tree Crop; Agricultural Engineer- ing; Information and Publici- ty; Veterinary; Produce In- spection; and Fisheries	Agricultural Extension
North- Central	Ministry of Natural Resources	Agricultural Extension; Ani- mal Resources; and Fisheries	Agricultural Extension
North- Eastern	Ministry of Natural Resources	Animal Resources; Agricultu- ral Extension; and Fisheries	Animal Resources
North- Western	Ministry of Natural Resources	Animal Resources; Agricultu- ral Extension; and Fisheries	Animal Resources
Rivers	Ministry of Agricul- ture, Fisheries and Natural Resources	Fisheries; and Agricultural Extension	Fisheries
South- Eastern	Ministry of Natural Resources	Fisheries; and Planning	Forestry
Western	Ministry of Agricul- ture and Natural Resources	Agricultural Extension; Vete- rinary; Fisheries; Agricul- tural Engineering; Produce Inspection; Agricultural Projects Planning and Market- ing; and Administration	Agricultural Extension
(Federal Departments)			
- Federal Department of Fores- try	Ministry of Agricul- ture and Rural Development	Agriculture; Livestock; Fisheries; Rural Development	Agriculture
- Federal Department of Forest Research	An institute of the Agricultural Research Council of Nigeria (as from November 1975)	9 Agricultural Research Ins- titutes; 2 Research Insti- tutes related to Animal Re- sources Production; and 2 Re- search Institutes on Fisheries	Agricultural Research Institutes
TANZANIA	Ministry of Natural Resources	Tourism; Wildlife; Fisheries	Tourism

IMPORTANT UNITS WITHIN FOREST SERVICES

Country	Plan- ning and Eco- nomics	In- dus- tries	Mar- ket- ing	Uti- li- za- tion	Re- source Survey	Plan- ta- tion	Edu- ca- tion and TRG.	Per- son- nel	Re- cords	Re- search	Logis- tics and Stores	Pub- lic Rela- tions	Admi- nistrative Support
1	2	3	4	5	6	7	8	9	10	11	12	13	14
CAMEROON	N	P	N	N	N	SO	P	N	N	SO	N	N	S
GHANA:													
(a) Forestry Dept.	U	N	SO	U	U	U	U	N	P	SO	U	N	S
(b) Research Institute	U	U	P	U	P	P	P	N	U	TP	U	N	P
KENYA	P	P	U	P	U	U	U	N	P	U	P	U	S
LIBERIA	P	N	N	P	P	U	P	N	N	N	P	N	N
NIGERIA:													
Benue/Plateau	S	N	N	N	N	U	P	N	N	N	P	N	S
East-Central	U	P	P	P	U	U	P	N	P	U	P	N	S
Kano	S	N	N	N	P	U	P	N	P	N	U	P	S
Kwara	S	N	N	N	U	U	N	N	P	N	P	P	S
Lagos	S	N	N	N	N	P	N	N	N	N	P	N	S
Mid-Western	S	P	N	P	U	U	P	N	P	N	P	S	S
North-Central	S	P	P	N	N	U	P	N	P	N	U	N	S
North-Eastern	S	P	P	U	P	U	P	N	P	N	U	U	S
North-Western	S	N	N	N	N	U	P	N	P	N	U	N	S

Country	Plan- ning and Eco- nomics	In- dus- tries	Mark- ket- ing	Uti- li- za- tion	Re- source Survey	Plan- ta- tion	Edu- ca- tion and Trg.	Per- son- nel	Re- cords	Re- search	Logis- tics and Stores	Pub- lic Rela- tions	Admi- nistra- tive Support
1	2	3	4	5	6	7	8	9	10	11	12	13	14
(Nigeria, cont.)													
Rivers	S	P	N	U	P	U	P	N	P	N	P	N	S
South-Eastern	S	P	P	P	U	U	P	N	N	N	U	N	S
Western	S	U	N	U	U	U	P	N	U	P	U	S	S
Fed. Dept. of Forestry	U	U	P	P	U	U	U	P	U	SO	U	P	S
Fed. Dept. of Forest Research	P	U	N	U	U	U	U	P	U	TP	U	P	S
TANZANIA	U	SO	P	U	U	U	U	N	P	U	P	N	S

KEY:

- N - Non-existent or unidentifiable
- P - Partially covered by another unit
- S - Sharing facilities with the Ministry or sister organizations
- SO - Belongs to a separate organization
- TP - Top priority or sole responsibility of the service
- U - Full unit/branch or an important function of a corporate unit

GRADES AND MINIMUM TRAINING REQUIREMENTS OF FOREST SERVICE PERSONNEL

	CAMEROON	GHANA	KENYA	LIBERIA	NIGERIA	TANZANIA
Professional Forest Officers (a) Cadres	Ingénieur des Eaux et Forêts (Admin. Level A1) Ingénieur des Travaux des Eaux et Forêts (Admin. Level A2)	ACF; SACF; CF; DCCF; CCF	ACF; CF; ACCF; DCCF; CCF	Forest Officer; Inspector General; CCF	ACF (II); ACF (I) SACF; CF; DCCF; CCF	Forest Officer III; Forest Officer II; Forest Officer I; Senior Forest Officer II; Senior Forest Officer I; Principal Forest Officer
(b) Basic Training Requirement	5-year course for Ing. des Eaux et Forêts 1/; 3 years for Ing. des Travaux des Eaux et Forêts	B.Sc. (Forestry) B.Sc. (Natural and/or Applied Science)	B.Sc. (Forestry) B.Sc. (Natural and/or Applied Science)	B.Sc. (Forestry)	B.Sc. (Forestry) B.Sc. (Natural and/or Applied Science)	B.Sc. (Forestry) B.Sc. (Natural and/or Applied Science)
Technicians (a) Cadres	Adjoints Techniques (Admin. Level B)	Ranger; Senior Ranger; Technical Officer; Senior Technical Officer; Chief Technical Officer	Forester; Senior Forester; Technical Officer; Senior Technical Officer; Principal Technical Officer	Ranger	Forest Assistant; Assistant Forest Superintendent; Forest Superintendent; Higher, Senior, and Principal Superintendent	2-year training. Trainees have EASC.

1/ So far a combined Agriculture (3 years) and Forestry (2 years) course has been proposed.

	CAMEROON	GHANA	KENYA	LIBERIA	NIGERIA	TANZANIA
(b) <u>Basic Training</u>	2-year forestry course after BEPC, i.e. 9 years primary and secondary school plus 1 year of general course in agriculture	3-year course incl. 1 year of practical training away from the school. Trainees have West African School Certificate (WASC)	2-year training. Trainees have East African School Certificate (EASC)	-	2-year training following 6 months field attachment. Trainees have WASC	2-year training. Trainees have EASC
(c) <u>Training of Senior Technicians</u>	-	1-year training after 3-8 years in the field as Ranger	1-year training after 3-5 years in the field as Forester	-	1-year training after 5-10 years in the field as Forest Assistant	13 months of training after 3-5 years in the field as Assistant Forester
<u>Protection Staff</u>						
(a) <u>Cadres</u>	Contrôleurs 1/ (Admin. Level C)	Forest Guard; Senior Forest Guard	Forest Guard; Senior Forest Guard; Ranger; Senior Ranger	-	Forest Guard; Senior Forest Guard; Forester; Senior Forester; Senior Ranger; Chief Ranger	Forest Guard; Senior Forest Guard; Ranger; Senior Ranger
(b) <u>Basic Training</u>	2-year training after eleven CEPE; 5-6 years of primary school education	About 6 months of training. Trainees have Standard VII Primary School Leaving Certificate	About 6 months of training before being appointed Ranger	-	6 months of training before being appointed Forest Guard. Trainees have Secondary IV Certificate	About 6 months of training before being promoted to the rank of Ranger

1/ The function of the contrôleurs is not well defined at present. Their position can be an intermediate one, between forest technician and forest protection staff.