

// The law and management of forests in Kenya. //

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by

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A Thesis submitted for the degree of Master of Science at the
University of Oxford.

JUNE
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ABSTRACT

The law and management of forests in Kenya ,

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In part one, chapter one introduces the problem of reduction of vital forests and the consequential threat to wildlife conservation and environment. Law is only part of the solution but important nevertheless especially where it gives more weight to the public interest in case of conflicting needs. Chapter two analyses the current forest policy which again emphasizes that in managing forests for the direct and indirect benefits, greater common good of all shall be given priority.

In part two, chapter three to six, analysis and interpretation of legal provisions is made in the light of four major forestry practices: Reservation of land for forestry; Protection of forests against destructive agents; Utilization of forest resources; and the role of forest officers.

In part three, chapter seven criticizes and gives proposal for reform of legislation on forests. The Forest Act which ought to deal exhaustively with forest issues is sketchy and applicable only to the statutorily dedicated forest areas, a mere 2.7 percent of the country. As if that is not enough, the reserved forests are easily relinquished for other purposes incompatible with forestry. Most of the other statutes do not regard forests as property and in other cases are silent on practices detrimental to forest conservation. Extension of forest law to the whole of the country, permanency of vital forest areas, thrifty utilization of forest resources and inclusion of environmentally oriented provisions are some of the remedies suggested after examination of the relevant legislation.

Chapter eight concludes that the current forest legislation is inadequate, legal interference with professional discretion is necessary, there are means to cope up with extra work in case of legal compliance and certainty of law is essential for effective enforcement.

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CHAPTER ONE

INTRODUCTION

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CHAPTER ONEINTRODUCTION

The subject of this thesis is "The law and management of forests in Kenya." In the study, it is the statutory law that is examined as it affects forests in the country and evaluation of the law as it ought to be for better realization of forest benefits is made. The term "management" is hereby used to mean all modern techniques of handling forest resources and soil to produce maximum forest products in quantity and quality. The forest products visualized are the indirect and direct benefits¹ and there is an underlying commitment that these benefits should be realized on sustained basis and without unnecessary impairment of forest resources and the soil. The ideal guiding principle in management of forest resources is that the forests are sacred public trust to be handed over to the next generations at least undiminished in value if not improved.² The term "forests" implies areas of predominantly woody species regardless of ownership status and it also includes land. Groups of trees or single trees especially for aesthetic value fall under this term.

What is the basic problem with the forests in the country? There has been net loss of forests through excessive use and destruction of forests to make room for other purposes such as agriculture and urbanization.³ Consequently, in the foreseeable future there is a justifiable fear of a threat to the very existence of forests and by implication to that of wildlife and natural plant species, with all the repercussions that it might entail.

A few facts about the country help to demonstrate the magnitude of the problem the forests are facing. The total area of the country is 582,646 square kilometres,⁴ and out of this, the statutorily dedicated forest area is only 2.7 per cent (17,000 sq.km.). These forests are scattered as can be seen from figure one (see page 3). On the whole, these forests are found in the high potential agricultural land, and hence great pressure to convert the forest area into farms. The population of the country is about 14 million people with a record growth of 3.3%. By the year 2000, the population is expected to be 28.1 million people. Approximately $\frac{2}{3}$ of the country is either semiarid or arid⁵ and the country is essentially agricultural with very little known mineral resources. The economic and social needs of the people on the other hand have changed. The exponential increase in demand on forest resources mainly as a result of steep increase in population and a rise in living standard calls for a reassessment of means to cope with the demand without unnecessarily prejudicing public interest in forests.

To avoid sacrificing present and future interests in forests the concept that there is a minimum area for a viable biological system to survive should be borne in mind when making decision to decrease the area of any given unit of forest. The concept has practical application in the country, for the fact that the forests are scattered makes them more vulnerable to various destructive agents than the case would be if they were large blocks. What may not appear to be a useful protection forest⁶ may perform a valuable function as a back up to the actual forests playing protective role. The concept of one formation acting as a shield to another has deeper significance in marginal land of the country. In the dry area, the frontier vegetation protects the interior plants from the dry dessicating

FIGURE I

GAZETTED FORESTS OF KENYA



wind and thus protects the biological system from desert encroachment.⁷

There is evidence that desertification is mainly a result of occupation and use of this marginal land by people.⁸ Even where desertification is not entirely the result of man's activities, the phenomenon is essentially of frontier vegetation first succumbing to the dry conditions and the main body being subsequently affected. If this concept of vulnerability of biological system when they are reduced below a certain level is borne in mind, decisions to deplete some portions of forests of no apparent protective role would not have been taken so lightly. Destruction of some forests could lead to some unfavourable side effects such as pockets of desert, a common feature in the country.

The other spillover effects of destruction of forests is the environmental deterioration. There are many environmental issues but they all revolve around water and air pollution; land impairment and destruction of vegetation. Forests are inextricably interwoven with all these major issues and it is unimaginable to come to grip with environmental problems without serious thought to forest conservation. In deed, forests, soil and water form an indivisible whole.⁹ Indiscriminate depletion of forests is bound to have adverse effect on soil and water, so vital for the quality of environment. Change of tropical forests is of such concern that it is one of the items traced in Global Environment Monitoring System (GEMS) in Nairobi by the United Nations Environment Programme.¹⁰ The burning of forests pollutes air by smoke but the worst effect is water pollution. When forests are burned or destroyed in any other way, suspended matter in running water which is otherwise trapped by vegetation finds its way into fresh and sea water, making it unfit for a variety of uses. In steep erodible areas, it is inconceivable to have any meaningful soil conservation programme without the aid of forests. Loss of fertile soil is the worst

form of damage to land productivity.

Land degradation especially when it is irreversible is very

serious in a country like Kenya where approximately 90 per cent of the population lives in rural area. The role of forests in protecting rural environment fits in very well with the overall Government policy of giving rural areas priority in development. Indeed the importance of forests in protecting rural environment also indirectly benefits the small urban population by provision of relatively unpolluted water.

Recently the environmental issues have assumed much greater importance because they concern the longterm quality of life. So important is the issue of protecting, maintaining and improving environment that the National Environmental Policy Act of 1969 in the United States stipulates among other issues that all policies, regulations and public laws of the country must as much as possible be interpreted and administered in accordance with the Act.¹¹ In fact a recent judicial ruling in the United States has gone further by compelling the U.S. Government agencies to prepare environment impact assessments also for activities and projects to be undertaken by them in other countries.¹² Kenya does not yet have an environmental law. This is the progenitor of all the environmental laws in the United States and other countries and its implication is that programmes which fail to consider ecological deterioration can be challenged on environmental grounds. It is therefore not far fetched to review forest legislation taking into account the environmental protection in the country. After all, it is a tacit assumption that the proper end of human activity is survival.¹³ A law that does not cater for environmental protection is not adequate for this end.

One may legitimately ask what is the role of law in forest management? Among the various means used to achieve effective forest management, forest laws role cannot be underestimated. In the first place, Kenya is fortunate that there was a forest law which statutorily reserved land for forestry purposes and gave some protection. In retrospect, without such a law, it would be difficult to visualize the country with anything like forests bearing in mind the desire people have for using land for agricultural purposes. To be complacent with these laws however, would be to assume that there has not been significant change of people's needs to warrant a modernization of law. As yesterday's laws were written for yesterday, there is a constant need for reassessment of forest laws in the light of present and foreseeable future circumstances.

The law, in this case which governs the relationship between man and forest resources is very much influenced by the needs of man. The assumption that these needs are about the same in different countries led to the importation into Kenya of extracts from Indian forest law, Cap. 7, 1878. The needs of the people are different and the emphasis in priority of the role the forest should play were different from those of India and have indeed changed considerably since the time of reception of the forest law, like many other colonial laws which were inappropriately imported by hard-pressed colonial administrators.

The forest law envisaged is certainly not meant to be a substitute to any sound forest management tools such as financial incentive, education, propaganda or any other form of motivation for the welfare of forests. It is recognised that the legislation is only part of the solution and that it must be accompanied by public education, incentives and disincentives (taxes and tax relief, grants, subsidies and loan on soft terms), investment in

resources that can be substituted for forest products such as geothermal and solar energy and hence minimize pressure on the scarce forest resources. The law is meant to be a complement and to be applied especially where irreversible biological damage might occur if the issue is to be left to education propaganda and financial incentive, the methods which, however sensible, might take longer to achieve the same result.¹⁴

What is envisaged is more positive law with alternatives in for example dry areas where people cut the only surviving trees for shelter, energy and forage. Under these circumstances the culprits know the usefulness of trees but the maxim "necessity knows no law" could not be more valid than in such cases. A law which permits Forest Department to systematically close some areas from grazing and planting of fast growing hardy species rather than merely prohibiting use of the only available tree is likely to be more effective under the circumstances. This is borne in mind during the current study. In other cases extension of the forest laws, especially where land owners might destroy protection forests, would be morally justified. Land ownership involves some social obligations anyway and the minority have no legitimate reason for undertaking activities whose consequential damage cannot be undone. Ecological balances associated with forests take hundreds of years to restore and where such balance has some practical significance, its destruction is tantamount to robbing the nation of its invaluable heritage. It is only fair that rights in property should be subordinate to public interest where exercise of such rights if unchecked would prejudice the public benefits bestowed by the forests.

In this study, no effort has been made to evaluate social costs and benefits of forests in the country. Such examination would be a separate topic in its own right and would roughly indicate whether forests should be

continued to be managed in the present forest areas or the land should be used for other purposes. It is a fact that there are inherent problems in estimating market values after for example, thirty years, the period most of the trees take to be harvested in the country. Any analysis of such future costs and benefits is more guesswork. The exercise is further complicated by potential inaccuracies in evaluating indirect benefits such as environmental protection. Indeed prediction of some uncontrollable factors such as weather, fire and other destructive agents for such long-term projects makes the exercise more of academic interest than practical usefulness.

In view of the fact that the statutorily dedicated forest areas is too small in relation to the size of the country,¹⁵ there is a case for maintaining the areas managed as forests. Other areas in the country which are evidently not suited for any other purposes should be used for water and soil conservation, where the climate is suitable.

Unregulated forest conservation will lead to highly degraded environment and any argument to future generation that forests were depleted simply because they could not meet the standard of internal rate of return, will be absurd. The impression the writer got during a tour of German forests is that internal rate of return of forests is not a criterion in forest management, and, yet Germany is reputed as having very sound economy.¹⁶ Security factors, like when availability of wood would be threatened by war or embargo by neighbouring countries¹⁷ and genetic preservation, some of which may in future be very important though of no apparent use now, are all factors which underscore the necessity of wise forest conservation, independent of the traditional economic gauge.

-It is for these reasons that in examination of forest policy, in the next chapter, only the forest benefits are emphasized and the opportunity costs are left out of account.

2. The idea is borrowed from Francois, T. (December 1930). Forest policy, law and administration, p.39.
3. Between 1963 and 1977 there has been a net loss of 30,447.5 hectares of gazetted forests. This is an average of 1,362.8 hectares per year.
4. Kenya Statistical Abstract (1977): p.5.
5. Lind, E.H. and Morrison, H.E.S. (1974). East African Vegetation, p.52. Also see figure 1. Semiarid and arid herbaceous areas with less than 500 mm. of mean annual rainfall.
6. Protective forest is one used for water and soil conservation. Wind-breaks also comes under this ambit.
7. In global terms, to reclaim land which has been lost for 20 years, it would cost one billion dollars (\$1000m.), (Tolba, M. Director (UNEP)). The Times, 30th October, 1978.
8. United Nations Conference on desertification in Nairobi, 1977, 2.
9. Francois, T. (December 1930). op.cit. p.12.
10. The Times, 3rd October, 1978.
11. Title 1, Section 102.
12. Sand, P.R. (July, 1976). Environmental legislation and technical assistance. p.11.
13. Hart, H.L.A. (Feb. 1961). The concept of law. p.187.
14. Education for example is effective in capturing young people's imagination. It takes long for them to have a say in conservation. Financial incentive also are slow because people have to wait long before harvesting trees.
15. Percentage of forest land to total land in some countries: Cameroon 63.1%, Liberia 43.3%, Tanzania 13.9%, Nigeria 10.0%, Ghana 9.3%, Adeniyi 3.1% (1976). Gabon 74.7%, Ivory Coast 37.3%, Angola 34.6%, Sweden 33.0%, West Germany 29.0%, Spain 10.6%, Finland 69.0%, compare Kenya 2.7%.

FOOTNOTES

1. Direct benefits are the actual wood which is used for various economic purposes such as energy, construction and household items. Indirect benefits come in as provision of clean water, retention of soil institu, recreation and wildlife use of forests.
2. The idea is borrowed from Francois, T. (December 1950). Forest policy, law and administration, p.33.
3. Between 1963 and 1977 there has been a net loss of 50,442.5 hectares of gazetted forests. This is an average of 3,362.8 hectares per year.
4. Kenya Statistical Abstract (1977): p.5.
5. Lind, E.M. and Morrison, M.E.S. (1974). East African Vegetation. p.59. Also see figure 1. Semiarid and arid here means area with less than 500 m m. of mean annual rainfall.
6. Protective forest is one used for water and soil conservation. Wind-breaks also comes under this ambit.
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FOREST POLICY

16. In fact, the German Federal Forest Act stresses that forests are to be maintained for environmental values besides economic use. F.A.O., June 1976. Fd Agric legisl. 25(1), p.60

17. At the moment, the border between Kenya and Tanzania is closed and the consequences would not be difficult to imagine if Kenya relied on Tanzania for wood requirement.

Before embarking on forest legislation, it is appropriate to examine the consequences of such policy. Government has various policies on different issues in the country, but in the case of forest policy as noted by Horrell, the term "forest policy" constitutes a settled course of action with regard to the use of forest resources which has been adopted and followed by a society.¹ In this study, it is the official government viewpoint² on forests which is borne in mind. The official stand is in form of principles which govern action directed towards desired ends.

(2) Until 1937, Kenya did not have any formulated forest policy and forest management practices were based on recommendations by various experts who visited the country,³ and in other cases the chosen course of action was in accordance with forestry practice in other parts of the world.⁴ The idea of having an official forest policy seems to have originated during the 6th Commonwealth Forestry Conference in Ottawa, 1932.⁵ Under the chairmanship of Mr. Waterer, then, the Chief Conservator of Forests Kenya, the committee on forest policy submitted a recommendation which led to a final resolution that each country should publish a statement of forest policy urgently and that the statement should be implemented by the governments concerned. Hence Kenya implemented the resolution in 1937 and the policy was restated in 1968 by the Independent Kenya.⁶

(3) The officially declared forest policy states that for the greater common good of all, forests in the country should be managed in accordance with ten critical principles. These principles are: Reservation of land for

CHAPTER TWOFOREST POLICYINTRODUCTORY

1. Before embarking on forest legislation, it is appropriate to examine the forest policy in the country because management decisions are supposed to be based on such policy. Government has various policies on different issues in the country, but in the case of forest policy as noted by Worrell, the term "forest policy" connotes a settled course of action with regard to the use of forest resources which has been adopted and followed by a society.¹ In this study, it is the official government viewpoint² on forests which is borne in mind. The official stand is in form of principles which govern action directed towards desired ends.

(2) Until 1957, Kenya did not have any formulated forest policy and forest management practices were based on recommendations by various experts who visited the country³ and in other cases the chosen course of action was in accordance with forestry practice in other parts of the world.⁴ The idea of having an official forest policy seems to have originated during the 6th Commonwealth Forestry Conference in Ottawa, 1952.⁵ Under the chairmanship of Mr. Waterer, then, the Chief Conservator of Forests Kenya, the committee on forest policy submitted a recommendation which led to a final resolution that each country should publish a statement of forest policy urgently and that the statement should be implemented by the governments concerned. Hence Kenya implemented the resolution in 1957 and the policy was restated in 1968 by the Independent Kenya.⁶

(3) The officially declared forest policy states that for the greater common good of all, forests in the country should be managed in accordance with ten critical principles. These principles are: Reservation of land for

forest purposes; Protection of forest estates; Promotion of wood using industry; Provision of adequate finance; Employment relief; Advise to county council and private forests; Public amenity; Research and education facilities. These are the stereotype principles which many countries now follow in management of forest resources. As these principles are directed towards provision of optimum forest benefits in perpetuity, there is not much dispute about the statements. It is however noteworthy that the official view on private forests is purely advisory. Rather than confine itself to officially reserved forest land, the forest policy should unmistakably address itself to private land,⁷ instead of being content with the advisory role. To make ground for necessary legislation and other legitimate forms of government intervention on some rights of land ownership, two principles should be extended to private land. A land owner may use his land as he wills, provided he does not destroy or damage it. Secondly any individual should manage his land in such a way that he does not adversely affect his neighbours or indeed anyone else with some interest on the land in question. Here lies the key to proper utilization of forests on private land, hitherto the victim of various abuses - as far as forests are concerned.⁸

(4) The other principles do not lend themselves to criticism because they are merely ideal propositions in order to achieve certain goals. Some of these principles are means to other more ultimate objectives. In this respect provision of funds and research coupled with education are clearly means to the ultimate goal of maximum forest products. Whether the more ultimate objectives will be attained depends on degree of implementation and rational ranking of priorities especially where objectives such as amenity

and industry promotion are mutually exclusive.⁹ Legislation is one of the main tools of implementing forest policy and it is the theme of this study. In passing, the anomaly of the main current forest legislation is evident when it is remembered that it predates the formulated forest policy and hence, it is not framed to meet the current aspiration of the forest policy.¹⁰

The basic reason of articulating forest policy and giving it effect with appropriate forest legislation, coupled with all administrative programme of conservation, establishing and maintaining forests, is simply because forests are believed to have some social benefits. These social benefits are essentially the overall objectives of the forest policy and any relevant legislation. The various benefits both of economic and indirect value are briefly analysed under forest policy, for they will have to be borne in mind throughout the subsequent chapters.

2. MAJOR FOREST BENEFITS

The forest benefits can conveniently be divided into direct and indirect benefits. The direct benefits represent the various forest products which are used to satisfy immediate economic needs. The indirect benefits on the other hand, cannot be evaluated in terms of economics easily. The benefits are longterm by nature, and mainly benefit the public rather than individuals.¹¹ In this study, protective forest is emphasized. These are the forests whose primary function is water and soil conservation and in some cases such forests have salutary effects on local climate.

DIRECT BENEFITS

(1) Energy:

In the absence of coal and oil in Kenya, the country has heavily relied on wood for energy requirements and the role of forests is bound to increase significantly as world inflation continues to bite. Firewood is used

directly for cooking and industrial heating. The current estimated consumption is 26 million metric tons per year,¹³ while the recorded consumption is approximately 24,000 metric tons from the forest area.

Charcoal is also widely used and the fact that charcoal at times can sell four times its official price in the black market¹⁴ indicates the importance of the commodity. Indeed, in the hierarchy of basic human needs, wood for fuel comes next to food.¹⁵ Charcoal produced officially is 15,640 metric tons while estimated consumption is 310,000 metric tons.¹⁶ Approximately 294,360 tonnes comes from outside the gazetted forests and usually no replacement of trees thus consumed.

One unfortunate feature of wood fuel utilization is that there is great waste which is at times conservatively put as high as 90%.¹⁷ With more efficient utilization methods, forests can be expected to play even greater role as more people switch to wood as a source of energy. In fact as noted by Energy Symposium, held in Nairobi, for Kenya, a country without fossil based fuel and on the other hand overly concerned with balance of payment, the energy policy, now underway will have to settle on renewable resources mainly from forests. Scarcity of wood will be tantamount to energy crisis for particularly rural people (90% of population) in the foreseeable future.

(2) Construction and Joinery wood:

Kenya does not import wood for all construction and joinery work. The wood is produced locally from the forests.¹⁹ Besides the wood obtained from indigenous forests, there has been a crash planting programme of mainly exotic soft wood to meet wood requirement.²⁰ A hectare of exotic soft wood on the average can attain a mean annual increment of $15m^3$. The present total plantations therefore when put on sustained yield level could have a potential

of 1 million cubic metres, giving allowance for delayed planting and some incidental losses from fires, windfalls and pests. Annual increment from indigenous forests now is conservatively estimated to be 150,000 cubic metres.²¹ The gazetted forests therefore have a potential availability of 1.15 million cubic metres annually. The volume available annually however would not be enough to meet even the estimated firewood consumption of 1.30 million cubic metres per year if the families and industries relying on firewood tried to get all the material from the gazetted forests.

(3) Plywood:

Currently, there are three plywood mills and their output almost meets the country's need. The plywood production goes to blockboard and tea chest manufacture. See table 2.

(4) Pulp and Paper woods:

The mill can now take plantations at a rotation of 15 years and consequently more wood can be obtained from a unit area as the harvesting is done before annual increments begin to decrease.

(5) Posts and Poles:

Posts are still the main material for fences. Poles are used for power and posts transmission, as well as in other construction industry.

(6) Christmas trees:

The demand is not very big. It is however an important market as it can be satisfied with either branches of trees or young trees grown within a short period. This is in contrast with a number of other forest products that take a long time to produce.

(7) Essential oils:

Cedar wood (*Juniperus procera*) is currently the most popular species for production of cedar wood oil. The oil is extracted by use of steam on wood and subsequent condensation. Beckley lists other species which could be used for oil production.²² The importance of these essential oils lies mainly in the fact that these oils have distinctive qualities, not easily duplicated on commercial scale.

(8) Medicinal products:

A number of species have been known and used by herbalists for medicinal purposes with some success. Even the pharmaceutical department in the country does recognize the importance of such plants of medicinal interest. According to Professors C.K. Maitai and S. Talala, University of Nairobi; (personal communication), a number of plants are known to contain substantial ingredients of medicine and further investigation could possibly lead to commercial utilization of such plants for medicinal purposes.

In his treatise on poisonous properties of some plants, Professor C.K. Maitai describes a number of plants which are widely used for arrow poisons (see table 3). Since the difference between poison and medicine is not clear cut, the plants with poisonous properties could very well be of useful pharmacological properties. Most of the plants known to contain essential oils are also of some medicinal interest.

The fact that some plants such as creepers and climbers²³ often found in natural forest biomas have high potential for medicine further makes a strong case for preserving substantial indigenous forests. At least this is also a wish of experts in pharmacy who also concede that chemical substances of plant origin could in some cases be superior to synthesized medicine.²⁴

TABLE 1: FOREST PRODUCTION

PRODUCTS	1973	1974	1975	1976	1977
coal (m ³)	163,000	139,000	12,000	115,000	57,643
wood (m ³)	42,000	73,000	84,000	64,000	32,420
hard wood (m ³)	269,728	294,444	150,679	408,688	423,355
soft wood (m ³)	-	10,472.905	11,005.99	11,870.580	14,486.052
rubber produced (tonnes)	-	13,000	34,000	43,000	50,000
plyboard (tonnes)	-	-	196.83	3,171.98	2,894.60
telegraph & telephone poles (m ³)	13,414	12,000	35,352	221,000	61,926 (Rm)
telephone poles (unit)	129,000	109,000	3,000	-	-
electric posts (m ³)	605,000	183,000	21,000	78,000	117,143 (unit)
crude oil (Kg)	22,528	12,056	9,042	27,916	31,828

Source: Field research and Central Bureau of Statistics.

TABLE 2: STOCK OF WOOD IN FOREST AREAS

	1973	1974	1975	1976	1977	1978
PLANTATIONS (HA)	128,000	134,900	142,500	149,400	156,400	162,717

	AREA (HA)	MERCHANTABLE VOLUME (M ³)	ANNUAL INCREMENT (M ³)
Indigenous forests	1,300,000	47,754,000	150,000

TABLE 3

NAME OF PLANT	MEDICINAL PROPERTY
<i>Cantharia</i> sp.	Cardiac glycosides
<i>Androsia digitata</i>	Local medicine
<i>Senecioium volkensii</i>	Cyanogenic glycosides
<i>Distolochia petersiana</i>	Snake bite antidote
<i>Opuntia tomentosa</i>	Locally used to treat fever syndrome
<i>Cassia occidentalis</i>	Purgative drugs
<i>Eucalyptus globulus</i>	Volatile oil of medicinal value
<i>Phorbia</i> sp.	Milky latex capable of causing inflammation of mucous membrane of eye, lips and stomach
<i>Teorhiza palmata</i>	Medicinal plant
<i>Cytinus buchananii</i>	Anti cancer drug
<i>Anthus</i> sp.	Volatile oil
<i>Modora myristica</i>	Volatile oil
<i>Mordica pterocarpa</i>	Masai medicinal herbs. Can induce vomiting
<i>Crusina africana</i>	Locally used to get rid of tapeworms
<i>Nerium oleander</i>	(Oleandrin) potent heart poison
<i>Junos africana</i>	Medicinal value
<i>Wolfia rosea</i>	(reserpine) an alkaloid used as tranquilizer in mental patient
<i>Raphanthus</i> sp.	Cortisone drug.
<i>Rhynchos</i> sp.	(Strychnine) rodenticide
<i>Phrosia vogelii</i>	Fish poison
<i>Guinea sanguinea</i>	Toxic cardiac glycoside
<i>Argusia ugadensis</i>	Used in common remedy.

Source: Professors C.K. Maitai and S. Talala;

The Arrow Poisons by Maitai C.K.

3. INDIRECT BENEFITS

(1) Climate:

Forests have a moderating effects on climate mainly because of the effect they have on temperature and wind. Forests by physically intercepting sun energy have a blanket effect on the air below the canopy. It is an observed fact that there are less extremes of temperature in forest areas than in the open. In fact, the function of trees for shade purposes has long been known to mankind.

(2) Wind:

When wind is unchecked, it can have two major consequences; it can dessicate land or physically damage the property as it has kinetic energy. Trees planted as wind breaks or in any other form tend to check the velocity of wind. Evapotranspiration is accelerated by net radiation, air in circulation, (Wind), and humidity. Checking the wind velocity in turn reduces evapotranspiration²⁵ thus leaving more moisture for plants, all other factors remaining equal. It is on this principle of checking winds that windbreaks are effective defense against desertification and general damages caused by winds.²⁶

(3) Rainfall:

The proposition that forests may increase rainfall is highly controversial. The argument against this proposition generally points out that forests are where they are because like any other vegetation matter, they are there because of rain and not vice versa. Suffice it to say that there is no conclusive scientific evidence that forests increase rainfall locally (Dr. Reynolds, personal communication), but there is strong reason to believe that there is a regional or continent-wide effect at which scale experiment is not possible. It is noteworthy however that, while the writer

is not aware of any proposition that forest decrease rainfall, there are well argued claims that forests seem to increase rainfall under some conditions.²⁷

(4) Water Conservation:

Forests are efficient mechanism of collection, infiltration and orderly discharge of water. The key role of forests here is storage capacity and hence while rain falls periodically the flow pattern on streams and springs is relatively regular. Even though in absolute terms forests decrease the amount of water,²⁸ this disadvantage is usually offset by need to have regular flow. Various users of water need constant supply because when it comes in floods all at once, most goes straight into the sea, salt lakes or underground deposits.

Forests increase infiltration of water because roots break up impermeable ground, and the decayed roots also create channels for water. Generally, the top soil resulting from decomposition of litter has also more water holding capacity.

The quality of water is also indisputably improved by the presence of forests. Forests trap the suspended sediment, leaving relatively pure water for various uses.

When temperature is high, forests tend to moderate the temperature of water and this is important to fish migration²⁹ as well as reducing any toxicity which might be accelerated by increase of temperature.³⁰

Water is a scarce commodity in Kenya and quite often the limiting factor in industrial siting and other projects such as irrigation.³¹ Occasional water rationing in towns is common knowledge. The importance of forests in conservation of this vital resource can hardly be overemphasized. It is for this water conservation role that some forests are cherished and referred to as water catchment in this study.

(5) Soil Conservation:

Soil erosion is primarily caused by moving water and to a lesser extent by wind. Forests by breaking the velocity of wind minimize wind erosion.³² Forests physically minimize soil erosion by reducing the velocity of water, and hence, the eroding capacity. According to the laws of hydraulics, there is correlation between velocity and the amount of work water can do in the erosion process.³³ The velocity of water is governed by slope, nature of surface and the volume of water. In any given area, considering slope and volume of water as constant, the surface of the ground depends on whether there are obstacles such as forests or not. Forests by creating obstacles to moving water considerably reduce erosion.

Because of extensive root network, forests also hold soil together in place. In fact for other engineering projects such as terraces and contours, they must be accompanied by vegetation cover for stability.

Why keep the soil in the place of formation? When top soil³⁴ is moved, plant nutrients are washed away and productivity of an area, even though with enough moisture is considerably diminished.³⁵ When parent rock is unloaded of its top soil, damage may be irreversible.

The other relevant fact is damage the sediment does to lakes and rivers. Siltation is a frequent consequence of soil erosion. As noted by Pathak,³⁶ forests are by far the cheapest tool in the hands of soil conservationists of preventing sedimentation in storage dams, water reservoir, river channels and any water works. Besides such forests could provide some necessities of rural people. It has been estimated that Lake Baringo will silt up in a not distant future unless drastic steps are taken to conserve soil, currently finding its way into the lake. The lake depth has been reduced from 10 metres to 3³⁷ metres now and it is this rate of silting that is of concern. Fisheries and the use of this fresh water in an otherwise fairly dry area will be in jeopardy. Sand rivers are common features in Kenya, all mainly due to deforestation on critical steep hillsides.³⁸ Water pollution can be attributed mainly to soil erosion.³⁹

(6) Recreation and Wildlife:

Forests provide amenity which is increasingly needed by modern society. In accordance with the forest policy, areas of unique scenic value and flora and fauna have been identified for use by campers and picnickers.

The amenity provided by forests is undoubtedly enhanced by the wildlife.⁴⁰ Since the forests form the habitat for these animals, any benefits derived from the wildlife could be attributed to the forests. Tourism is an important revenue earner and tourists come to the country not merely because of beautiful beaches, comfortable hotels and good climate but mainly to see the wild animals, so rare elsewhere. In fact Kenya leads all the Black Africa countries in tourism. In 1977 the number of recorded tourists was 344,400 and there has been a general increase over the last few years. The revenue earned by tourism during 1977 was £50 million.

(1 Kenya pound is approximately 1.33 British pound).⁴¹ The revenue comes in form of foreign currency and its importance can hardly be emphasized in a country facing problem of balance of payment due to heavy imports. Forests have a contribution to other economic benefits of wild animals as consequent on hunting, sale of trophy, and meat production. Recreation and wildlife is a legitimate multiple use of forest areas.

(7) Grazing:

Grazing is essentially an agricultural activity but forests have played an important role for communities without adequate grazing ground. Forests have been particularly valuable during dry seasons when carrying capacity would otherwise damage land in especially dry areas like Samburu district.

(8) Employment:

In every country employment is an major social issue. Kenya is not an exception. According to Labour Office Official, J.W. Omedi, approximately 2 million people are actually looking for jobs. (personal communication). The situation is aggravated by the fact that another large number of people are under-employed though they are not classified as unemployed. Forests play a crucial role in alleviating the truly explosive social problem for a total of 15,901 people are on wage employment in the public sector industry.⁴² Forestry is the second largest public sector employer as far as industries are concerned.⁴³

At least another 10,000 people find employment on wood based industries. Considering the number of dependents on the forest employees, forestry is an essential industry from the employment point of view.⁴⁴ It is common in the country to justify industrial projects on the grounds of

unemployment relief. If there is such industry to be maintained by Government from the employment point of view, its forestry whose employment benefits mainly fall on the needy rural people. Some towns such as Elburgon and Webuye owe their existence to wood industries.

4. MINOR BENEFITS

The foregoing are the major benefits of forests in the country but by no means exhaustive. For especially the local community, forest products such as fruits, fibre, grass, gum, leaves, litter, moss, seedlings, resin, rubber, honey and wax are fairly important for domestic purposes. For people with simple needs, some of these minor benefits are more important than for example, sawlogs and they certainly see the role of forests from point of view of these minor benefits rather than other purposes such as soil conservation. For these major and minor benefits to be obtained on sustained yield basis, land for forestry purposes should legally be set aside. This is described in the next chapter.

13. Source: Walker's field research. An average rural household consumes 12Kgs of fuelwood per month.
14. Charcoal was selling at 125/- in Nairobi. Daily Nation, 25/4/1978.
15. Some people especially in wern areas will obviously opt for firewood to cook food rather than clothes and shelter.
16. Nderep, C.M. (1977), Kenya Forest resources and forest products marketing, p.6.
17. Fremba, D. (June 1978), African Report p.11.
18. Sunday Nation 10/12/78 - Towards an Energy Policy for Kenya. p.9.
19. See table 2 on wood production.
20. See table 3.
21. F.A.O., (27 July 1974), Kenya Forest Plantations project. Sawlog and pulpwood availability and marketing prospects. p.1.

FOOTNOTES

1. Worrel, A.C. (1970), Principles of forest policy. p.215.
2. Policy is viewpoint among alternatives. If there is only one choice, there is no policy issue. Clawson, M. (1977). p.42.
3. Logie, J.P.W. & dysen, W.G. (1962), Forestry in Kenya. p.3.
4. Most of the earlier colonial forest officers had worked elsewhere in British colonies.
5. 25th session resolution on statement of policy. 6th Commw. Fors Conf; 1952. Ottawa.
6. A forest policy for Kenya, Sessional paper no. 1 of 1968. 9p.
7. Private land, embraces land under control of individual and county council.
8. Michigan Environment Protection Act, 1970 authorizes any person to bring suit against anyone damaging environment.
9. Use of forests for recreation and amenity is incompatabile with intensive industrial use.
10. The Forest Act, Cap. 385 first enacted in 1911.
11. Individual here includes corporations.
12. Mainly, sources of energy in Kenya are : Fuelwood, charcoal, sawdust, agricultural waste such as cow dung and stubble, gas, oil, electricity, solar, wind and hydro. Geothermal and nuclear energy are yet to be developed.
13. Source: writer's field research. An average rural household consumes 375Kg of fuelwood per month.
14. Charcoal was selling at 125/= in Nairobi. Daily Nation, 25/4/1978.
15. Someone especially in warm areas will obviously opt for firewood to cook food rather than clothes and shelter.
16. Ndegwa, G.M. (1977), Kenya Forest resources and forest produce marketing. p.6.
17. French, D. (June 1978), African Report p.11.
18. Sunday Nation 10/12/78 - Towards an Energy Policy for Kenya. p.5.
19. See table 2 on wood production.
20. See table 3.
21. F.A.O., (27 July 1971), Kenya Forest Plantations project. Sawlog and pulpwood availability and marketing prospects. p.1.

22. Beckley, V.A. (1931), Essential oils. The species are: *Micromeria microphylla*, *Mentha sylvestris*, *Ocimum canum*, *Eucalyptus* species, especially *E. globulus*.
23. *Aristolochia petersiana* and *Excoecoria madagascariensis* have some poisonous property. Maitai, C.K., The arrow poison. p.16.
24. For example body gets rid of plant chemical substances fairly rapidly and they are not persistent chemicals like D.D.T. and the heavy metals, all of which could be vulnerable on accumulation. Mark, A.F.(1975), Man and the environment.
25. In tropics conditions may be conducive for all the precipitation to be evaporated.
26. The U.S. Government spent substantial amount of money on shelterbelts across the country during time of depression. Potter, B.G. (Jan. 1976), The Dirty thirties shelterbelt project.
27. Nicholson, J.W. (1930). The influence of forests on climate and water supply in Kenya, p.11 - 4, claims occult precipitation is increased by 25% and monsoon rains is increased by a maximum of 3%. His claims cannot be dismissed easily as they were endorsed by Mr. Walter, then Director of East Africa Meteorological services. Mr. Walter had similar observation when comparing rainfall in forested and deforested areas in Mauritius.

A positive role of forests on rainfall is also confirmed by Hursh, C.R. (1952), Forest management in relation to climate and soil resources.

Deforestation, overgrazing and subsequent soil erosion deprives ground of the stored moisture and the sun's energy, instead of evaporating moisture to form clouds, the ultimate rain, does the work of heating ground and air alone. In regional terms this could reduce rainfall. Stewart, P.J. (1976), Erosion in the weather machine.

In some cases, forests have low albedo than the light coloured deforested areas. Low albedo seems to be associated with more rainfall than the case with high albedo. Increase in albedo reduces rainfall. Charney, J. et al (1977), A comparative study of the effects of albedo change on drought in semi-arid regions.

28. Dr. Leyton, L. (1978), Lecture on water catchment.
29. Trout fish for example don't like warm water and pockets of such warm water restricts migration.
30. With higher temperature, toxic substances tend to be more toxic and oxygen using decomposition takes place in water. Solubility of oxygen decreases somehow with increase in temperature. Reduction of oxygen in water does qualify as pollution.

31. The ultimate development of Turkana and other semiarid parts of Kenya will indisputably depend on harnessing of the available water. Constant supply of the critical rivers will depend on wise water-catchment forests management.
32. In bare grounds especially with loose soils or sand, dust in motion is a common feature especially in dry season.
33. Beckley, V.A. (1935). Points that work done $\propto v^2$; carrying capacity $\propto v^5$; and size of particle $\propto v^6$. p.8.
34. It takes 250 years to 1000 years to produce a single inch of soil by normal process of rock weathering. Beckley, V.A. op. cit. p.16.
35. Pathak, S. (April 1974). Role of forests in soil conservation with special reference to Ramanga watershed.
36. The bare unproductive parts of Baringo District often visible especially from the air is due to unchecked soil erosion. In some cases, deserts are consequences of soil erosion.
37. Mukolwe, M. (1979) (personal communication, Provincial Director of Agriculture.
38. Two thirds of the country is dry and sand rivers are the main feature. When floods come water overflows spoiling adjacent land. People can only get water by digging away sand.
39. Sedimentation also settles in rivers covering aquatic life with consequential decomposition, all making water unfit for consumption and other uses needing unpolluted water.
40. Besides amenity, wild life assist in seed propagation especially for seeds that have to pass intestinal tract to germinate. Sackey, V.A. (1976). The relation between forestry and wildlife.
41. Chesire, R.K. (February, 1979). Kenya tourism top in Black Africa. The standard 2nd February, 1979.
42. Kenya Statistical Abstract 1977. p.269.
43. Agriculture has 20,548 people on wage employment. Statistical Abstract. op. cit. p.269.
44. On the whole many more people find employment on wood based industry. Approximately 150,000 people get employment from forestry activities. Muslim, A.F. (1975). The law and the environment in Kenya. p.44.

CHAPTER THREERESERVATION OF LAND FOR FORESTRY PURPOSES¹

1.(a) Statutory reservation of land for forestry purposes is indisputably the first logical step for any meaningful forest management in any country. Forestry practice in Kenya is so tied up with the land tenure that it is appropriate to mention the status of land in which forest areas are situated today. In 1896, when the British Administration had penetrated the interior of the country, by then known as East African Protectorate, they extended the Indian Land Acquisition Act, 1894, to acquire compulsorily land for railway, Government building and other public purposes. There was a need to attract settlers to make the railway project viable. The law officers adjusted laws in favour of the Administrators wishes and this led to enactment of the Crown Land Ordinance,² 1902 which essentially claimed all land, except the coastal strip, to be crown land whether occupied by the Africans or not.

(b) The Coastal strip was leased from the Sultan of Zanzibar subject to the rights of occupiers. To overcome the problem of land ownership in the Protectorate under the dominion of the Sultan, the Land Titles Ordinance was enacted in 1908. The ordinance made provisions for the adjudication of rights by a quasi-Judicial court presided by the Recorder of Titles. Where claims of interest succeeded, the claimants were issued with a certificate of title, either for freehold, mortgage, or a leasehold. All land that was not successfully claimed became crown land. For a claim to succeed it was usual to prove interest in immovable property. It is significant that trees, except coconut trees, are exempted from immovable property under the ordinance which was made specifically for the 10 mile strip, by then under the Sultan of Zanzibar.³ Thus private interest was recognized on the coastal strip while no such interest was initially recognized in the interior.

(c) The Crown Land Ordinance, 1915 replaced and repealed the crown land ordinance 1902. The C.L.O., 1915 reserved some lands for Africans with a provision that when such land was wanted for lease or sale to settlers, it would be taken away from African reservation. Only when the land thus taken away significantly reduced the total reservation could the Government think of adding alternative land from the unalienated Government land.⁴ The Africans were tenant-at-will and did not have any right to alienate the land thus reserved.⁵

Besides reservation of land for Africans, the Ordinance dealt with disposal of Crown Land by direct sale or 999 years lease to European Settlers.⁶ Plots in township were offered on 99 years lease. The Act also gave the Conservator of Forests the right to construct roads of access to any forest area.⁷

(d) There was much discontent among the Africans on the C.L.O., 1915 in as much as it did not recognize the rights of Africans on land. The policy of allocating land to Europeans only was much resented and the various land problems especially in the Central Province led to the Morris Carter Commission, in 1932. The Carter Commission recommended division of land into various categories that would cater for the interests of Europeans and Africans. As a result of the recommendation, there was a spate of legislation in 1939 defining the "Highlands" - exclusively for the Europeans and the "Native Areas" for the Africans. The Crown Lands (Amendment) Ordinance, 1938 was passed with schedules of land categories and also the Native Lands Trust Ordinance, 1938 was passed. The Act declared that the Trust Lands were no longer Crown Lands. There was however some provisions in the Trust Land Act (as it was called afterwards) for the setting apart of any land required for public purposes. All the land under the jurisdiction

of the Native Lands Trust Ordinance, 1938 is vested in the county council of the area. The council holds the land for the benefit of people ordinarily resident in such area and, when need arises, the council gives effect to rights or interests on such land to tribes or individuals in accordance with customary law.

Section 52. of the Native Lands Trust Ordinance make provision for Government with the consent of the Land Board (originally Trustees of Trust Land) to declare a forest area from trust land. The net profit from such forest areas was to be paid to the county council concerned.

Customary law among the various tribes does not recognize individual ownership of land and up to 1956 all the land under the Trust Land Act remained truly trust land governed by customary laws and individuals had no titles to land.

(e) In 1956, Native Land Tenure Rules were issued under the authority of Native Lands Trust Ordinance and a process of adjudication of right of ownership of land was started in Central Province. Individuals who claimed interest over several parcels of land had them consolidated and a single certificate of ownership granted. Since the trust land was under customary law which does not recognize individual ownership, the process of adjudication of claims was illegal and it was legalized by enacting the Native Lands Registration Ordinance in 1959.⁸ As soon as any trust land is thus registered under any written law, it ceases to be trust land and it becomes private land.⁹

(f) Where consolidation of land in trust land is not appropriate, Land Adjudication Act, Cap. 284 was enacted in 1968 to deal with such land. Both the Land Consolidation and the Land Adjudication Act make use of the arbitration board as opposed to Land Titles Act, Cap. 282 which used the Court to ascertain various claims to land. Therefore the application of Land Consolidation Act and Land Adjudication Act have meant evolvement of private land from Trust Land. On the other hand, in the Highlands most agricultural land was allocated on a leasehold basis and in a few cases there were outright sale when individuals got freehold titles.

(g) On the attainment of Independence in 1963, there were therefore three main categories of land in the Colony and Protectorate of Kenya¹⁰ namely:

- (i) Government land¹¹
- (ii) Trust land¹²
- (iii) Private land¹³

Section 203 of the Independence Order-in-Council confirmed all estates, interests or rights in or over land. It meant that all the interests and titles dealt with by colonial government were honoured by the African government in entirety.

FOREST RESERVATION

1) Parallel to this development of division of land between Africans and Europeans (Asians were not allowed to own land except in towns) there was a gradual build up of forest areas, statutorily reserved under powers of the various Forest Acts in force in the years in question. Regard to suitability of forest was more important than the ownership status of land where the land was either Trust Land or unalienated Government Land. The forest areas, thus created by various proclamations happened to be on Trust land and on unalienated Government Land.

The earliest forest reservation was made as far back as 1902 when first Conservator of Forests, Mr. Elliot made arrangements for publication of the Forest Rules. The 1902 Forest Rules contained forest areas. They also contained provisions of reverting the land thus gazetted for other purposes. In fact some forest areas,¹⁴ were proclaimed during that year. Prior to the coming of the Conservator of Forests, trees rather than the land were legally reserved. The mangroves trees, so far used for commercial purposes were reserved and also trees within two miles of Uganda Railway-line were reserved, except on private land, to provide the necessary fuelwood for the locomotives.

During these early years, reservation of land for forest purposes was made by proclamation and the boundaries were rather approximate. It was usual to describe the boundary from hill to hill or along some major rivers.¹⁵ In other cases a straight line would be mentioned and this was not preceded by a ground survey. It was also usual to proclaim some forest areas by reference to farms owned by settlers and the forest boundaries of the land thus proclaimed remained fluctuating depending on whether the adjacent farmers needed the land or not. In proclaiming forest area, the main object initially was to have enough forests to supply timber to the colony. It was therefore the policy of the Government to proclaim mainly the areas with closed forests. In the case of proclamation however, a number of open glades were included in the forest areas. Especially where the land was occupied by Africans, forest proclamation, like any other form of alienation of land was a source of dissatisfaction. The right of local people on forest areas has been such a dominant issue in forestry management that even now there are still some people who argue their rights in some forest areas have not been dealt with satisfactorily and in some cases, some rights of local people in some forest areas are not recognised legally.¹⁶ At independence in 1963, Regional Governments were established in the country and that would have put the forest areas on Trust

Land under various Regions. To make the position clear, the Minister¹⁷ declared all forest areas to be Central Forests. The notice was deemed to have come into effect on 1st June, 1963, the date the country got Internal Self-Government.

(c) Todate therefore about forty-four percent of all statutorily reserved forest areas are on Trust Land and for all practical purposes, they are managed like forests areas on Government Land. The Government has an interest in these forests while the land is vested in the local county councils for the benefit of the people who are traditionally resident in such forest areas. In practice, the Forest Department does not consult the local county councils for the activities connected with development of forests. For the use of land, for activities not connected with forestry management such as tourist hotel construction, a third party has to deal with the county council in question.

(2) Whereas in the past forest boundaries were approximate, the various forest areas now have well surveyed forest boundaries with beacons and in some cases when funds permit, boundary lines are cleared to avoid any uncertainty as to the extent of forest areas. Section 8.(1)(a)(xii) of the Forest Act, Cap.385 makes it an offence for anyone to remove or interfere in any way with beacons or boundary marks. A fence along the boundary or any other notice should not be shifted or interfered with.

The section is meant to guard forest areas against encroachment, a very common offence by the adjacent farmers who do encroach on the scattered forest areas either intentionally or accidentally. The Forest Officers also need to know the boundaries for all the forest management activities and of course the Officers maintain maps of the forest areas under their jurisdiction. There are cases of lost beacons, when the survey section is normally asked to determine the position of missing beacons.

(3)(a) Connected with the overall issue of reservation of forest areas is the major problem of excision of the land thus reserved for forest purposes for other uses such as agriculture and urban, or even for some public buildings such as schools, hospitals and churches. Section 4 of the Forest Act empowers the Minister to declare any unalienated Government Land to be a forest area. By giving twenty-eight days notice in the gazette, the Minister can alter boundaries of such reserved forest areas and can also declare them to cease to be forest areas.

(b) Considering the great pressure there is for land in Kenya, and the ease with which the forest areas can be excised for agricultural and other uses, the gradual net loss of forest land threatens the entire forests in the country. In practice, most of the Legal Notices nowadays in connection with forests deal with exchange, addition and exclusion of forest areas. The overall trend during the last few years has been nett loss of forest areas, and excision of forest areas for agricultural purposes have been made on fragile and unsuitable land, better left as protective forests.¹⁸ See table 4 which gives details of additions and excision between 1963 and 1977.

(4)(a) While the main reservation of forest areas does not take into account details of rare scarce species of some plant formation, there is statutory authority for the Minister to declare any forest area to be a nature reserve. Section 6. of the Forest Act specifically empowers the Minister to declare any suitable forest area to be a nature reserve. The Minister also has power to declare that such forest nature reserve shall cease to be and revert to normal forest area. The main object in declaring such nature reserve is to preserve amenities, flora and fauna therein. Nature reserves are made only from Forest Areas. The nature reserves are left to natural evolution and if there is any activity permitted by the Chief Conservator of Forests, it is

TABLE 4

EXCISION AND ADDITION: 1963 - 1977

TOTAL EXCISION	=	108,772.2 Ha.
TOTAL ADDITION	=	58,329.7 Ha.
NET LOSS	=	50,442.5 Ha.
AVERAGE LOSS PER YEAR	=	3,362.8 Ha.

NATIONAL PARKS

Similar to the nature reserves are National Parks and National Reserves which have statutory backing. The main aim of reservation of land for National Parks and Reserves is to conserve wildlife and create recreation areas. Of necessity, vegetation provides the habitat for the animals and the reserve reservation of land for wildlife management. However, unlike the Forest Act which empowers the Minister to declare forest areas only from the Government Land, section 5 of the Wildlife (Conservation and Management) Act, Cap. 375 empowers the Minister to declare any area of

only with the aim of ultimate conservation of flora and amenities of the reserve. Section 6. of the Forest Act specifically forbids any cutting, grazing, fishing, hunting, removal of forest produce or any form of disturbance of fauna unless the Chief Conservator and the Chief Game Warden are of the opinion that such species ought to be reduced. The word "forest produce" has a wide meaning in the Forest Act.¹⁹

(b) There are today some nature reserves within the forest areas.²⁰ The reservation of forest nature reserves is comparatively temporary because as the need arises to convert such nature reserve into a production forests, the Minister declares them to be no longer nature reserves. Besides providing amenities, the nature reserves are supposed to contribute to scientific educational and historical value. Light touch management is the underlying principle. Apart from the conservationists, the majority of the public do not appreciate the value of nature reserves and they are quite often held as land reserved for some future projects and a good target for excision. The nature reserves also act as habitat for the wildlife, although this is not the primary purpose of nature reserves.

3. NATIONAL PARKS

(a) Similar to the nature reserve are National Parks and National Reserves which have statutory backing. The main aim of reservation of land for National Parks and Reserves is to conserve wildlife and create recreation area. Of necessity, vegetation provides the habitat for the animals and therefore reservation of land for wildlife management. However, unlike the Forest Act which empowers the Minister to declare forest areas only from the unalienated Government Land, section 6. of the Wildlife (Conservation and Management) Act, Cap. 376 empowers the Minister to declare any area of land to be a National Park or Reserve and to include restrictions and conditions of National Parks and Reserves in the area thus declared.

land to be a National Park. He only has to consult the relevant competent authority. The term "competent authority" means the owner of land.²¹ If the competent authority refuses to co-operate, the Act give the Minister the power to make a reservation declaration order, provided the National Assembly has approved the draft of the order with or without modification. In the case of Trust Land, the land can be set apart in accordance with section 118. of the Constitution. The relevant part of the Constitution stipulates that the President after consultation with the County Council, may give written notice to the County Council in which land is vested, to the effect that the land is required for the purpose of Government. In the case of the private land, the Minister still has the power to apply the provision of the Land Acquisition Act, Cap. 295, section 6.

(b) Section 6. says that the Minister of Lands may ask the Commissioner of Lands to acquire land compulsorily for a public body where reasons for such acquisition justify the subsequent hardship. Any acquisition is of course, accompanied by full compensation (Land Acquisition Act, section 3.). Fair compensation of the property acquired is a constitutional right as embodied in section 117(4) of the Kenya Constitution. Section 12. of the Land Acquisition Act also makes it possible for the Commissioner of Lands to compensate the person dispossessed of land with land equivalent in value in lieu of money. The Land Acquisition Act repeals the Land Acquisition Act 1894 of India but confirms all the acquisition proceedings started under the Indian act.

(c) In addition to National Parks, the Minister is empowered by section 18. of the Wildlife (Conservation and Management) Act, to declare any area of land to be a National Reserve with the agreement of competent authority. Such agreement would include restrictions and conditions of National Reserve in the area thus declared.

(d) To give a greater degree of protection to some animals, the Minister may also reserve some specific areas, each not exceeding 2,600 hectares to be local sanctuaries. The reservation of a local sanctuary also has to be with the agreement of a competent authority, pursuant to section 19. of the Act.

(e) The process of relinquishment of the National Parks, National Reserves and Local Sanctuary is much more complex than excision of forest areas. Before an area ceases to be a park, reserve or sanctuary, the Minister with an agreement of the competent authority has first to give 60 days' notice of the intention, inviting objections by notice in Gazette and newspaper with a circulation in the whole country. Finally after 60 days of such publication of order, the Parliament has to give consent by a resolution. (Section 7. of the Act. Alteration of boundaries would also follow the same process when such alteration means loss of the area thus reserved.

(f) In practice some forest areas have been excised for use as National Parks. Unless such excision interferes with protective forests, it is a loss which has not been very serious since trees are preserved. In reserving land for wildlife the factors mainly considered are the presence of a substantial number of wild animals and the possibility of recreation as in Nairobi National Park. As far as the forests and trees in these areas reserved for wildlife are concerned, there is an unwritten policy of laissez-faire by the Department concerned with the wildlife management.

4. PRIVATE AND TRUST LAND

(a) As for the private and communal²² lands there is no statutory reservation of any area for forest purposes. Some individuals reserve some woodlots in their farms but may practice crop rotation unless some portion of the land is suited only to trees. The Forest Department role is only an advisory

one as far as reservation of private forest is concerned. Some Trust lands have some portions of forests which have been reserved along with the other contiguous land for use by the local people in accordance with the customary law. In a number of communal lands such forests have been depleted. Other forest concentrations such as in Masai area in Narok are fast disappearing primarily because of lack of legal protection. The communal lands in Trust land areas are governed by customary law. Generally, planting of trees is not approved by customary law in a number of areas because it is viewed as an attempt to assert individual land ownership, a concept that is certainly inconsistent with customary law among various communities. In this respect, customary law has not been of much assistance in establishment of forests. Legally, customary laws are valid so long as they are not repugnant to any written law. In the absence of statutory forest reservation in communal lands, the practice of customary law, however undesirable cannot be declared to be repugnant or illegal.

(b) On the good side of customary law, there were some sacred portions of forests in most parts of Kenya. Such sacred portions of forests were of immense spiritual values and local people used to perform their ceremonies in such forests. Remnants of such portions still persist especially in communal lands and where christianity has not prevailed. The respect for such sacred forests was so strong that even statutory reservation of any forest area was not as effective. For example, a Mr. Leith of the Imperial British East Africa Company cut down a tree for a flagstaff for the fort in 1892, taking the tree from an "ithembo" in Iveti and this led to an attack of the fort by the infuriated Wakamba.²³ "Ithembo" in this case was a sacred portion of forest, preserved through generations. Local people are also punished severely if they cut trees from such sacred forest.

FOOTNOTES

1. Acknowledgement: The writer is indebted for the account of this Chapter to the following authors:-
 Chai, Y.P. and McAuslan, J.P.W.B. (1970). Public law and political change in Kenya;
 Jackson, T. (1976). The law of Kenya. An introduction.
 Maini, K.M. (1967). Land law in East Africa.
 Ridall, J.G. (1974). Introduction to Land Law.
 For understanding some legal terms such as ownership, trusteeship and rights, so important in land law, reading of Salmond on jurisprudence has been of considerable help.
2. Ordinance simply means Act. After Independence "Ordinance" was changed into "Act." L.N.2/1964. For historical convenience the various Acts passed before Independence are referred as Ordinances.
3. Land Titles Act, section 3.
4. Unalienated Government Land means government land which for the time being has not been leased to anyone or in respect of which the Commissioner of Lands has not issued any Letter or Allotment.
5. Crown Land Ordinance, 1915, section 54.
6. Freehold titles were in some cases granted instead of leases.
7. Crown Land Ordinance, section 86.
8. The Act was ultimately called Land Consolidation Act, Cap. 283.
9. The private land thus registered is now governed by the Registered Land Act, Cap. 300.
10. The term Colony and Protectorate of Kenya was adopted in 1920.
11. Government land means all land in the country which is neither private land nor trust land. Area is approximately 117,378 sq.km. Source of area: Kenya Statistical Abstract - 1977.
12. Trust land means all land in special areas which for the time being are vested in County Council of the district in which the land is situated. "Special areas" means the areas boundaries of which were specified in the First Schedule to the Trust Land Act (a) as in force on 31st May, 1963. Approximate area is 457,633 sq.km.
13. Private land means any land for which a freehold title has been granted by Government or the one in which a freehold title has been granted under Land Consolidation Act, or the Land Adjudication Act. A land that the certificate of ownership has been granted or any such claim of ownership has not been disallowed is a private land. (Legal Notice 589/1960). Area is approximately 7,135sq.km.
14. Forest area means any area of land declared under provisions of section 4., Forest Act, Cap. 385, to be a forest area.
15. Logie, J.P.W. and Dyson, W.G. (1962) op.cit. p.6.

16. The Forests (Elgeyo) Rules gives rights to Elgeyo people to use forest areas for various purposes.
17. Legal Notice 174/1964.
18. Lake Nakuru Forest Excision is on very poor agricultural land, (L.N. 185/1972).
19. Forest Produce in Forest Act means: trees, timber, charcoal, firewood, plants, bark, leaves, litter, gum, fruits, seeds, moss, creeper, withies, resin, galls, grass, fire, reeds, rushes, rubber, sap, spices, canes, earth, peat, sand, murram, stone, limestone, honey, wax, and other items as the Minister may prescribe in the Gazette.
20. Kiseru Nature Reserve, (L.N. 22/1967) which has an area of 466 hectares. South-Western Mau Nature Reserve, (L.N. 4/1961) which has an area of 42,240 hectares.
21. "Competent Authority" means: for the Government land, the Minister of Lands.
For the Trust Land, The county council.
For the private land, the owner of the land. In this context, private land includes any Government land which has been alienated to anyone even in the cases of leased land.
22. Communal land means any land which is being used by a community in accordance with customary law but the land is technically vested in the county council of the area. Communal land also refers to any land being used by a group of people who are registered as the owners pursuant to Land Adjudication Act and carries their activities such as ranching in accordance with the Land (Group Representative) Act, Cap. 287.
23. Penwill, D. J. (1951): Notes taken on Kamba customary law in Machakos District.

CHAPTER FOUR

FOREST PROTECTION1. INTRODUCTORY:

(a) Trees and forests cannot be statutorily protected against destructive natural forces such as storms and unusual drought. Legislation can however be applied to create shelterbelts and preserve forests. Shelterbelts minimize the storm effects and vegetation well preserved is thought to moderate the severity of drought.¹ At the other end of the scale is the legal protection of forests against pilfering of minor forest produce such as small bundles of firewood from dead branches of trees and other items such as grass and withies. These minor offences against forest produce really are not a threat to forests and trees in the country, although they are offences. Expensive protection is only justified in the sense that if the practice is tolerated, it may lead to bigger forest crimes.

(b) The real threats to the existence of trees and forests in the country are destructive cutting of forests, burning and overgrazing (which includes destruction of vegetation by wild animals such as elephants and buffaloes). The legislation in Kenya in essence tries to curb these factors as a result of which a considerable amount of the renewable natural reserves have been depleted. To some extent, diseases and pests that adversely affect plants are dealt with in some legislation, especially with reference to agricultural crops. Cutting, burning and grazing, when done in moderation are perfectly legal forestry practice. When excess is involved either illegally or because licensing policy does not take into account the guiding principle of sustained-yield concept, a high degree of protection becomes necessary.

(c) As far as the diseases are concerned the main object, even though not stated in the Forest Act, is to avoid an epidemic outbreak of any disease or pest. Foreign diseases are dreaded because if imported, there could be outbreaks due to lack of their natural enemies.

CUTTING AND RELATED ACTIVITIES

(1) Forest Areas and Unalienated Government Land:

(a) People cut trees because they want forest produce such as charcoal, firewood, or sawn timber, or alternatively they may be interested in clearing land for growing crops or for other purposes such as building. In forest areas,² the Forest Act, Cap. 385, makes it an offence for anyone to fell or damage any forest produce (section 8(a)(i)). Section 8(a)(vii) also makes it an offence for anyone to clear, cultivate or break land for any purpose.

This subparagraph is mainly used today to protect forests against the illegal squatters who have contributed to substantial forest destruction. The maximum penalty stipulated by the Act, (section 14) is a fine of three thousand shillings or imprisonment of six months. There are no reported appeal cases on prosecution of illegal squatters because the convicted people would rather pay the nominal fine usually imposed in Magistrates' courts. In 1977, there were 214 cases successively prosecuted by the Police in Molo area alone. All the cases were in connection with illegal squatters who had erected buildings and cattle enclosures contrary to section 8(1)(a)(iii) of the Forest Act. (Police reference P.C.R. folio 1-615), Molo Police Station. All the cases were disposed of without any appeal.

(b) The activities of illegal squatters that lead inevitably to cutting of trees in forest areas are many. Conviction of illegal squatters is usually based on evidence of occupation and cultivation of forest land

without a licence. In the case of *Musoke v. R.*,³ a conviction on the charge of clearing and breaking forest land for cultivation or any other purpose without a licence was set aside on appeal because there was no proof that the accused did any of the illegal activity on the date in question. It would have been a different case if the charge was that the accused had maintained cultivated land in forest area without a licence. The words in section 8(1)(a)(vii) of the Kenya Forest Act are similar to the words in section 14(2) of the Uganda Forest Act, under which Musoke was charged. The phrase "clear or break up any land for cultivation or any other purpose" has hence judicially been construed to be a wider meaning than simply hoeing and weeding for purpose of growing crops, the traditional practices used by the illegal squatters in the forest areas. Evidently for a charge to be successful, it should be more specific on the activity for which a forest licence would be required.

(c) — Section 14(3) stipulates that any person convicted of occupying or cultivating forest area should be given a certain time to move out of forest with his property. If he does not move out within the time stipulated by the court, his property becomes Government property and may be disposed by the Chief Conservator of Forests in a manner he deems fit. In practice when illegal squatters are fined, they argue they have a crop which is not mature. They are then given time to harvest their crops. By the time harvest time comes, some other crop is not yet mature and in any case, the small fine is already forgotten. Another operation is needed usually with the assistance of Police. The staff of the Department have been unable to expel the illegal squatters when they are in large number. In fact some officers have been beaten and others threatened to such an extent that their jobs of forest management are seriously hindered. Section 14(1)(d) of the Forest Act in trying to avoid this type of situation makes it an offence for anyone to obstruct a person in execution of his duties under the

Forest Act. It is the writer's experience that illegal squatters contributes greatly to the destruction of forests in forest areas. Some of them genuinely think they have some rights in forest areas which ought to be recognised and others think they can gain ownership of land by adverse possession.

(d) Section 8(1)(b)(i), Forest Act extends some protection of trees to the unalienated government land.⁴ The subparagraph prohibits cutting or damaging any tree on unalienated land. The protection is specifically limited to trees as opposed to the broad spectrum of forest produce protected in forest areas. In practice, the protection is not very effective because there are many activities which are not prohibited in unalienated land all associated with destruction of trees. It is a lower form of protection whereby any activity is permitted unless specifically prohibited.⁵

(2) National Parks:

The Kenya National Parks constitute a substantial amount of forests in Kenya. Cutting of trees in National parks is briefly forbidden by the Wildlife (Conservation and Management) Act, Cap. 376. Section 3(b) stipulates that it is an offence to cut or damage any vegetation in a National Park. Paragraph (j) also protects trees from cutting by prohibiting any clearing, cultivation or breaking up land in any National Park. Any of these illegal activities would constitute an offence and liability to a maximum penalty of ten thousand shillings or imprisonment for a term of one year. The Act protects animals in national reserves and local sanctuaries but is silent on vegetation in these areas. Section 15 of the Act stipulates that the Minister after consultation with a competent authority⁶ may restrict some acts on the areas adjacent to National Parks, National Reserves, and Local Sanctuary for the purpose of ensuring security to animals and vegetation

in the areas reserved. The activities contemplated by the legislature are burning which if out of control can damage animals and vegetation elsewhere. Cutting is an activity which could hardly be stopped and the power is not generally exercised by the Minister.

(3) Trust Land:

There are portions of forests in Trust lands and exploitation of those forests are meant to benefit the people ordinarily resident in such forests. Section 61(4) of the Trust Land Act, Cap. 288 stipulates that any traveller who does damage to anything growing shall pay compensation to the District Commissioner who in turn will dispose of such compensation to any person who is a right holder of such land or to the county council in a fair proportion. Section 37(1) of the Act also makes provision for exploitation of trees under a licence. In practice the local people would not need a licence to get material from forests, to which they are anyway entitled in accordance with the Trust Land Act which recognises customary laws. There is therefore no protection of trees against indiscriminate cutting and even where cutting is done under a licence, no provision for replanting and in practice there is a systematic depletion of those various portions of forests which have not been set apart for forest purposes. As population increases, forests in Trust lands are converted into cultivation land very easily with subsequent clearing of forests.

(4) Private Land:

Elsewhere in the country, trees and forests which fulfill the protective function of soil conservation are given some kind of protection by the Agriculture Act, Cap. 318. The Act is a comprehensive system of control of agricultural land use and is administered by official and administrative bodies for the country as a whole, provinces and districts.⁷ Section 27 of the Act empowers the District Agricultural Committee to establish an agricultural subcommittee for any particular area.

(a) Of particular interest to tree conservation are the powers of the Minister of Agriculture to make land preservation orders. The underlying concept in the Agriculture Act is that land should be used for the production of various crops without loss of soil fertility and productivity and such standard should be maintained in the future. Section 48(1)(a)(i) therefore stipulates that for the purpose of the conservation of soil, the Minister with consultation of the Central Agricultural Board may prohibit the breaking or clearing of land for the purposes of cultivation. Paragraph (b)(i) of the same section may require the owner of land to do afforestation and reafforestation of any part of the land. If the owner of land fails to carry out any of the soil conservation measure as stipulated for any particular piece of land, the Minister, through his agents, may carry out work in accordance with the Land Preservation order and the cost of such work shall be deemed to be a land preservation loan in accordance with section 56. The land preservation loan is registered and becomes an encumbrance on the land that survives any land disposition made subsequently.

There is sufficient degree of delegation of powers to make rules and by-laws to the District Agricultural Committee and County Council respectively. The Director of Agriculture can make a land preservation order on authority of such rules and by-laws and anyone aggrieved may appeal to the Minister and if dissatisfied with the Minister's decision, may appeal to Agricultural Appeals Tribunal which is final.

(b) If the system is applied, it can effectively protect trees from cutting on steep slopes as it is also provided by the Agricultural (Basic Land Usage) Rules made under section 48. The Basic Land Usage Rules make it an offence to cultivate on land with a slope exceeding 35 per cent without written permission from an authorised officer. An authorised

officer if he is satisfied that soil erosion might take place can extend his powers to a slope of down to 12 per cent. Cultivation of land within 100 ft. of a water course or cutting down of any tree is forbidden unless authorised by an authorised officer. Where a water-course is more than 100 ft. wide, the protected distance is equal to the width of the water-course, subject to a maximum distance of 100 ft.

The Electricity Act, 1944 also has a provision for management order. Section 187 of the Electricity Act, 1944 states that if the Minister is of the opinion that any agricultural land is being mismanaged or supervision has ceased, with the consent of the local agricultural committee, he may manage such land to the satisfaction of the Minister. The mismanagement activities are those that lead to the deterioration of land and although not specifically mentioned, the destruction of trees would constitute an act of mismanagement. Section 187(1) of the section empowers the Minister or his agent to sell the land including the timber on the land. Depending on how the provisions of the Act are applied, it could be destructive rather than protective. As a rule is not done sparingly. In some cases, considerable numbers of trees in streets and parks are protected by various by-laws of the municipalities to prevent destruction of trees in parks and in streets. Some of the trees planted by the local authorities in some parks may for power units which deals with ornamental trees in parks. The legal protection of trees on private plots and the various powers of the local authorities do not have to have any authority from anyone to clear trees on private plots for various uses which are otherwise in accordance with the Building Act. Developers can therefore clear portions of trees or forests for building site without environmental concern and anyone without a permit to clear trees in the land would not have a legal right to do so.

working to stop such environmental degradation as far as the forests are concerned.⁹ The unwritten policy¹ of many land developers in towns is to construct first and leave landscaping which does include planting of trees all after the buildings are completed. Inevitably, complete restoration of environment is slow if not impossible.¹⁰

As opposed to protection of trees, the Electric Power Act, Cap.314 powers any authorised distributor to lop or fell any tree that might interfere with any electric supply line. Usually the owner of such tree is given twenty-one days notice to fell such obstructing trees and if he does not comply, the distributor fells such trees or lops them as the case maybe. Section 64 of Electric Power Act stipulates that the lopping should be carried out in woodmanlike manner and any damage done on the land shall be made good. The power to clearfell trees extends to countryside when electric line maybe constructed. In practice there is an outstanding agreement with the municipalities that an authorised distributor of any electric supply lines may trim or cut trees as they see fit to prevent interference with electric supply lines. As most of the electric supply lines are above ground rather than underground, considerable numbers of trees in streets and highways suffer this fate. There was a public outcry when aesthetically valuable acacia trees were destroyed under the Electric Power Act at Mivasha. Elsewhere in the country essential trees such as windbreak have been cut to make way for power lines.

FIRE

Generally people set fire to rubbish as a part of preparation of land for planting crop and in case of pastoral tribes, they set fire to grass in order to get fresh succulent grass for their livestock. This leads to seasonal grass fires which are also meant to kill ticks which cause various kinds of diseases. For whatever reason a fire is started, it at times

gets out of control and destroys considerable wealth of the country. It is estimated that ash constitutes only about one half per cent of the total content of most wood, and when there is near complete combustion, most of the ash minerals¹¹ anyway get blown by wind, leached or washed away by rain water. To start with, burning associated with shifting cultivation impoverishes soil and when the tree crops are planted more minerals are drawn by such trees. Each subsequent harvesting in various rotation mean mining soil nutrients and when coupled with burning, soil reaches an irreversible position. A literature study done by Wolfson in limestone soil in Latin America showed that it roughly takes about ten totwelve years to regain potassium after burning. (personal communication). While on the other hand, if a tree dies and decomposes there is a recycling or nutrients activated by microorganism and no drastic loss as that associated with burning. The various legislation, dealing with the issue of fire can best be analysed in terms of land usage¹² which may result in fire outbreak. The land usage can conveniently be grouped under Land preparation; Honey hunting; Camper and the travellers; and on occasional cases, Profit motive, when people deliberately set fire to property as opposed to other forms of land usage when there is no intention to do any damage by the fire thus used.

tion for any damage sustained as a result of a fire.

(2) Land Preparation:

(a) Because of many agricultural activities in which fire is used to burn the unwanted trash, the largest category of fires in the country would fall under this classification. People set fire to vegetation not to cause damage intentionally. Because of innocent mind such people do not hide and are often caught. In other cases, the culprit may try to hide when he realizes that the fire is out of control and is likely to cause damage. In forest areas, section 8(iv) of Forest Act prohibits burning of grass, undergrowth or any forest produce except on a licence from the Chief

Conservator. To further protect forest areas, burning of vegetation on any unalienated government land within the vicinity of a forest is also prohibited when such burning would spread to the forest area. Section 15(a)(iii) of the Forest Act also empowers the Chief Conservator to ask any licensee to assist in control of forest fire or prevention. The Wildlife (Conservation and Management) Act, Cap. 376 has also a provision on section 13(3)(c) which prohibits setting fire to any vegetation in National Parks.

(b) Elsewhere in the country, except in the case of reserved areas,¹³ section 4. of the Grass Fire Act, Cap. 327 stipulates that one must give notice before burning vegetation on one's land. Section 3. of the Act stipulates that one may only burn vegetation which is one's property and should not kindle fire which may endanger the property of other people. According to subsection (2) of section 4., although it is a defence to say that one gave necessary notice, such defence shall not affect the right of any person aggrieved to receive compensation for any damages incurred as a result of such fire. The Grass Fire Act recognises the rule of absolute liability established by *Rylands v Fletcher*.¹⁴ Section 17. of the Act confirms liability by stipulating that anyone can receive damages by civil action for any loss sustained as a result of a fire.

(c) Liability for the consequences of fire which has spread is a settled law even in cases of where factors such as whirlwind unexpectedly take fire to someone else's property. In the case of *Dawson v Onslow*,¹⁵ a defence on whirlwind did not succeed and it was held that the rule of absolute liability established by *Rylands v Fletcher* applied. Even the case of fire caused by locomotive sparks falls under the rule established by *Rylands v Fletcher*. It is generally held that where such spark fires catch grass on the railway reserve and such fire spreads and causes damage to adjacent lands, the rail-

may become liable for the damages incurred. In the case of General Manager of the Uganda Railway v H. Tarlton,¹⁶ it was held that although the railway had statutory power to run the locomotive, it was liable for any sparks which caught inflammable grass and spread to the adjoining land. These are old cases but they have stood the test of time.

(d) As the Chief Conservator of Forests is recognized by the Act as an owner of land, he could under the Grass Fire Act, successfully sue any person who sets fire in such way that it causes damage to forest areas.

On forests serving a protective role in agricultural land, Land Preservation Rules, section 48. of the Agriculture Act also prohibits burning on such vegetation.

(3) Honey hunting:

(a) Honey is an economic commodity of high value and people are prepared to travel to most inaccessible forest areas to get honey. As the hunting of honey invariably involves the use of fire, there is legislation forbidding uncontrolled collection of honey in forest areas and also in National Parks. Section 8 of the Forest Act generally prohibits honey hunting activities both in forest areas and on unalienated government land unless one has a licence. The honey hunting activity is associated with the use of smoke in driving away the bees. Honey hunters go to very inaccessible areas and there is a high probability of dropping fires which if the vegetation is dry can start fire. Careful honey hunters, especially when they are on a licence and know it will be ascertained when they start forest fires, take much care while smoking bees with the consequence that forest fires are very rare.

(b) The Grass Fire Act, section 9, also recognises the inherent problem of fire spreading from honey hunting activities. The section stipulates one needs permission to use another's land for honey production. The section specifically excludes the reserved areas. In reserved areas burning by the nomadic people is an accepted practice.¹⁷ Honey collection in the National Parks is also objected to by the Wildlife (Conservation and Management) Act on the same grounds.

Due to the high probability of forest fires associated with honey hunting, section 11(f) of Forest Act empowers Forest Officers, Magistrate, Justice of peace and Game Department officials to destroy any honey equipment found in forest areas and also on unalienated government land if placed without authority. However expensive honey collection equipments may be, it should be destroyed if found unlicensed.

(4) Campers and Travellers:

Campers, picnickers and travellers in transit have at times been responsible for forest fires. The main point in section 15. of Forest Act in empowering the Minister to make rules in regard to camping and picnicking is to control campers from causing negligent fires among other things. In practice everyone is supposed to extinguish fire after use in forest areas so that there is no possibility of fire starting after the users have gone. The Forest Act is even more strict by stipulating no smoking in some forest areas. Section 8(v) of the Forest Act makes it an offence to carry matches or any lighted material without a licence by the Chief Conservator of Forests in any forest area.

b) There are other accidental forest fires in forest areas such as caused by bottles. Leaving pieces of bottles in forest areas by anyone using forest is objected to in principle mainly to avoid forest fires. Forest fires started by for example bombing exercise are expected to be extinguished by the people doing the exercise.¹⁸

5) Profit motive:

a) Where forest produce is scarce and the Forest Department is trying to conserve such produce, people may deliberately set forest on fire to get forest produce such as burned logs either at a reduced rate or free. In such event, land for cultivation would be available and all those factors may make someone to set forest to fire. Such malicious forest fire which is set with the intention of causing damage, which in fact results in arson. The issue is a serious one and is dealt by the Penal Code, Cap. 63. Section 334(c) of the Penal Code stipulates that anyone who wilfully and unlawfully sets fire to any standing trees saplings or shrubs, whether indigenous or not, under cultivation is guilty of felony and is liable to imprisonment for fourteen years. The type of trees protected are those that have been planted, regardless of whether they are exotic or indigenous species. Trees growing naturally seem to be excepted from this provision.

(b) Malicious fires in the countryside are rare except in case of revenge. In the forest areas such malicious fire would occur when people would benefit from such fires by for example getting employment of putting off such fires. It is writer's experience that some forest fires in Nyahururu were started in 1972 with anticipation of getting land to cultivate especially near the town where "shambas"¹⁹ were scarce. Elsewhere, people can start fire just as a revenge on an officer who may be unpopular with the community.

(c) On the issue of getting extra money fighting forest fires, attention is given to the fact that, although it is arduous and risky job, generous allowances are not made as this would have the opposite effect of encouraging fire. In fact, the Grass Fire Act, Cap. 327, the main Act dealing with fire control, stipulates that any owner of land may require anyone in the vicinity of a fire to assist in controlling such fire. If a person refuses to comply with such request, he would be guilty of an offence and liable to a fine of four thousand shillings or imprisonment of one year. The "owner" as used in section 12 of the Grass Fire Act includes the Chief Conservator of Forests.

In practice there are not many cases of the prosecution of people for causing malicious fires. It is difficult to detect someone wishing to burn forest in some remote corner where, since it is his intention, he would naturally avoid being seen.

(6) Fire Prevention:

(a) Most of the legislation is ideally aimed at fire prevention because once fire has started considerable damage and expense on fighting such fires do occur. Section 5 of the Grass Fire Act gives Director of Agriculture power to declare fire danger in any particular area. The order and the conditions under which burning may take place must foresee about fifteen days in advance, for it cannot become effective until at least fourteen days have elapsed before commencement of such prohibition.

On the whole burning of vegetation is not prohibited in the country provided one gives a notice that he is to burn his land. This is of course provided the fire does not happen to be prohibited during that particular time by the Director of Agriculture.

(b) To protect forest areas from this burning of the adjacent farms, there is a standard practice of early burning around the forest area and hence, creating firebreaks. Within the forest areas, various forest plantations are separated by firelines, either of ground cleared of inflammable materials or with evergreen vegetation. The Grass Fire Act, section 8, with the exception of reserved areas, makes provision for establishment of fire breaks, thirty feet wide on either side of boundary. In fact, if one neighbour is uncooperative in making firebreaks, the Grass Fire Act empowers the cooperative person to enter the land of the other person, without being charged with trespass, and construct the necessary firebreak. He can legally recover the cost of such construction.

(c) Although a neighbour is bound to make a firebreak on his side of the land, he nevertheless can claim for damages for any fire which may come from his neighbour even though he may not have constructed the necessary fire break when such damaging fire occurs. In the case of *Cullinan v Vair*, it was held that the absence of a firebreak around a house which was burned by fire from his neighbour's land does not constitute contributory negligence on the owner of the house.²⁰ It is the last act of negligence which matters because without such fire, the house would not have burned, even though overgrown with inflammable grass.

(d) There is also a standard practice of declaring a fire season by Divisions in a forest area. When such declaration is on in any particular forest area, no burning is tolerated in the forest area. The order does not extend beyond the forest area's boundaries. The various county councils are empowered by section 11 of the Grass Fire Act to declare a state of danger on any area and they have discretion to exempt some people from the provision of such order.

(e) The Forest Act also generally provides closing of any part of a forest area to people and the main aim in a situation like that is to prevent forest fires. The highly susceptible forest areas can hence be closed during the fire season. For the general safety of public from forest fires, the Chief Conservator is empowered by the Forests (Closing of Roads) Rules to close any specific road leading to or passing through spots of fire hazard. Although the Forest Act does not specifically say roads should

not be graded in the forest areas, there is an outstanding principle that

roads should not be graded in the forest areas. Their grading is undesirable.

GRAZING

Grazing becomes objectionable when the carrying capacity of any area is exceeded. The damage to such land is to a large extent proportional to the number of animals that have exceeded and the feeding habit of such animals. Where regeneration of vegetation is wanted, it is wise to keep all animals away for some time to allow establishment of vegetation. Essentially forest legislation tries to avoid a situation where grazing is inconsistent with proper forestry practice.

with the recommendation of Veterinary Officers who take into account the

(1) Forest Areas:

(a) In forest areas section 8(iii) of Forest Act stipulates that no one may erect a cattle enclosure without a licence. The word "cattle" has a wide meaning.²¹ The use of the Act here is to curb the activities of illegal

squatters nowadays who besides carrying on other destructive activities move to the forest areas with their livestock. Subparagraph (vi) of the section

also prohibits any unauthorised grazing in the forest area and subsection (2)

of the same section stipulates that the owner of any cattle found in the

forest area is liable together with the herdsman unless the owner proves that

the cattle are in the forest contrary to his directive. Section 11(e)

authorises some officers to seize and detain any cattle found unattended in

the forest area. In practice when the number of cattle is large, officers

find it cumbersome to act in accordance with section 11 of the Forest Act.

It is usual for the herdsmen in general to run away leaving cattle unattended when they suspect that they might be interrogated or arrested by forest officers. Such unattended cattle occasionally do havoc to forest plantations if they are in the vicinity of vulnerable trees.²²

(b) Although the Forest Act does not specifically say goats should not be grazed in the forest areas, there is an outstanding principle that goats are not allowed in forest areas. Their browsing habit makes them undesirable in forest areas especially on young plantations or where regeneration is taking place. In some countries goats have been statutorily barred from forest areas.²³ Camels can also be objected on the same grounds as they prefer the species that eventually grow into trees.

Grazing when done under control is not a serious problem. The Forest Department employees keep cattle in the forest areas in accordance with the recommendation of Veterinary Officers who take into account the quantity of grass available.

(c) There is occasional damage by the wild animals such as buffaloes and elephants which are given legal protection by the Wildlife (Conservation and Management) Act. In fact the Forest Act leaves the entire question of wildlife to the Game Department. Section 8(viii) of the Forest Act prohibits the hunting of wild animals subject to any provision by the Wildlife legislation. Forest legislation protects forest only from the domestic animals and for the wild animals protection is left to such devices as fences²⁴ when feasible and justified. As a matter of practice, there are some birds which are extremely useful in preying rats which kill especially young seedlings. These birds are encouraged by establishing perching poles,

especially on grassland planting but any regulation of these birds is dealt with only by the Wildlife legislation.

(2) National Parks:

In National Parks, the Forests are statutorily protected only from domestic animals. The Wildlife (Conservation and Management) Act, section 13(f) specifically makes it a forfeiture offence to introduce any domestic animal into a national park. If such domestic animal is found in the National Park it can be impounded in accordance with section 17. of the same Act. As for the wild animals, there is a laissez-faire attitude for the Act does not make any provision for reduction of the wildlife in the National Parks. In this respect, wild animals have at times contributed to a great deal of vegetation destruction as anyone can notice in Tsavo National Parks. There are also peak periods when these animals also die due to lack of enough food especially during the dry period.²⁵ In practice there is no enrichment planting in the National Parks and the idea of introducing any vegetation in the National Parks is statutorily prohibited. (Section 13(f) of the Act).

(3) Countryside (Private and Communal Land)

(a) Grazing elsewhere in the country is a major problem the vegetation faces. The problem is aggravated by other repugnant activities that go along with the grazing. Such practices as firing to get good grass and lopping trees to provide fodder for the animals contribute greatly to desertification, not mentioning the serious soil erosion, also subsequent to overgrazing.

(b) The Agriculture Act, 1967 empowers the Minister to make land preservation order for conservation of soil. Among the steps the Minister can take in accordance with section 48.(1)(a)(ii) is to prohibit grazing or watering of livestock on areas where soil erosion can take place. The land preservation orders were usually meant for large scale farmers and in practice, for small scale farmers, all the Agricultural Officers can do is to advise. There is no statutory classification of areas where soil erosion can be a menace. Identification of such areas is left to the discretion of officials and of various bodies such as District Agricultural Committee.

(c) The problem of the destruction of vegetation in the land held and used communally is a worrying factor. The Trust Land Act, Cap. 288 generally makes control of grazing only in various patches of concentrated settlements such as areas of irrigation but for the rest of the areas, control for the number of livestock and the kind is not legally catered for. Goats which seem to withstand drought conditions more than many other domestic animals are widely kept. It is widely held that goat economy has significantly contributed to desertification in Kenya. Some other African countries are contemplating enacting laws to do away with goats in their countries.²⁶ Some communities who hold land communally and use it in accordance with customary laws are registering for group ranching. The Land (Group Representatives) Act, Cap. 287 however concerns itself with membership, registration and accounts and is silent on grazing management.

5. DISEASES AND PESTS

(1) Diseases and pests are among the natural calamities that destroy forests. Although the problem cannot be solved by legislation, precaution of plant disease is embodied in the Acts and to this end, laws have played a large part in control of diseases and pests, which if epidemic would cause

avoc to plants.²⁷ The main act dealing with diseases and pests is the Plant Protection Act, Cap. 324. As trees are plants, in theory the act is supposed to cater for the forests in the country besides any other legislation providing protection of trees against disease and pests.²⁸ Diseases and pests are endemic in any country and provided there is no epidemic or signs of epidemic levels being reached, eradication costs are not justified. Introduction of foreign disease or pests is particularly objected to because the organisms might in fact find the new environment very conducive to multiplication with subsequent undesirable effects from the increased population.

2) Prevention:

The maxim "Prevention is better than cure" is certainly most appropriate in case of forest diseases and pests. It is not only expensive to cure infested plants but it is a gamble to treat effectively the unhealthy plants considering the field is quite wide with many factors that cannot be controlled.

a) Section 15(a)(iii) of the Forest Act empowers the Chief Conservator to ask only the licensee²⁹ as a condition of licence to assist in reporting, controlling and eradicating any injurious insect or fungi.

b) The Plant Protection Act, section 4, stipulates that every owner of land shall take all the necessary measures in identifying and forwarding specimen of diseases. As for the infested areas, the Minister can make rules forbidding either taking plants to such areas or removing plants from the infested areas. He also has power of quarantining the infested areas generally as per section 3(k). To further make prevention of disease effective, the Minister can also prescribe hygienic ways of planting, growing

and harvesting of crop (section 3(g)). He can also regulate the licensing of nurseries which specialise in seedlings for sale, all, in an effort to prevent the spread of any disease identified or suspected.³⁰

(c) Section 7.(1) makes it an offence for anyone to introduce any disease into a cultivated land punishable by a fine of two thousand shillings or six months imprisonment. At any time the Minister can make rules on treatment of any building, vehicle or any other container which might be contaminated by plant diseases.

(3) Treatment: Finally, when prevention is not successful and a disease breaks out, the inspector is empowered by section 4. of the Plant Protection Act, to ask the owner of land to take all the necessary measures for eradicating the disease.³¹ If the owner does not comply with the order of the Inspector, the Inspector may enter such land and carry out disinfection, fumigation and any other form of treatment. If treatment is impractical, the Inspector can order destruction of the infected plants. The owner of land is liable to the payment of costs of doing the work, notwithstanding any penalty he may have to incur for failing to comply with the order of the Inspector.

Section 6. makes provision that if the Minister thinks fit, he can compensate farmers for the crops destroyed in course of such treatment, but this does not usually happen.

For the purpose of carrying out treatment or inspection of affected area, the Inspector has power to enter any building or land and if the owner is present, he can inform him. Section 5 stipulates that the only building he should not enter is the one used for dwelling, otherwise he has

power of entry at all reasonable hours. If there is any obstruction of the inspector in course of his duties by anyone, section 7(2) provides a penalty of six months imprisonment or a fine of two thousand shillings.

(4) Importation and Exportation:

(a) Because of the inherent problem of disease associated with importation or exportation of plant material, section 8. of the Plant Protection Act makes stringent conditions which should be observed in course of importation and exportation of plants. As soon as material is at the port of entry whether for export or is being imported, the custom officers are requested to cooperate with the inspector. The inspector inspects such material and if found infected, they are treated in accordance with section 8. of the Act.

(b) The plants are also kept in quarantine under any conditions prescribed by the inspector. The containers which may have been used for such material are also properly treated. If in the opinion of the inspector, the material cannot be treated effectively, he can order such plant material meant for export or importation to be destroyed and in this respect, there is no compensation for the material destroyed.

In all cases a certificate of inspection is issued and plants can only be exported or imported at specific ports in the country and in this case, the Act recognises only Mombasa, Nairobi and Kisumu.³²

It is an offence to break any of these Import-Exportation rules.

(c) The Timber Act, Cap. 386, recognises a disease in wood as a defect which should be identified by a grader. Section 13(h) of the Act prohibits sale of wood or wooden good which are infested by insects or disease generally harmful to wood. Such infested wood should be treated or destroyed to avoid contamination of other healthy property.

(d) In practice, the Plant Protection Act is drafted with the Agricultural crop in mind as is also evident from the subsidiary legislation which exclusively deals with agricultural crops and the common pests which affect for example coffee and maize. The Timber Act deals with the wood which is being marketed to the world market. To compete internationally high grade wood, naturally free from disease apart from other defects is the main object of the Act. The Act leaves other details of disease check to the Plant Protection Act, which has wide ranging powers on diseases affecting vegetable matter.

(July, 1977). The legal perspective.

Value of indigenous trees have been destroyed by various developments in towns.

Composition of ash vary considerably depending on sources and local availability of minerals. The major constituents of ash are calcium, potassium, magnesium, sulfate, phosphate, carbonates and silicates.

Most of the forest fires is started in human activity. Seeall, M.C. and Brown, E.R. (1975). The bushfire environment of South Eastern Australia.

"Report of the" means Trust land in the North Eastern Province, Isipah, Karabait, Turkana and Taboru Districts.

Ryland v. Fletcher, L.R. (1868) 3 H.L. 330. If one breeds or uses a thing of dangerous nature in his land, he must keep it at his peril, and if it escapes and does damage to his neighbour, he is liable for the consequences.

Dawson v. Odell (1911), 13 K.L.R. 32.

General Manager of the Uganda Railway v. Terton (1912), 5 K.L.R.

FOOTNOTES

1. See Chapter two on role of forests on climate.
2. Forest area is any area declared to be a forest area as per section 4. of the Forest Act.
3. Musoke v. R (1958) E.A. 751.
4. Unalienated government land is used in Forest Act to mean land for the time being vested in the Government which is not subject to any conveyance, lease or occupation licence from the Government. It also excludes land declared as a forest area and land set aside for public use except the outspans which are included as unalienated government land.
5. In statutorily reserved forest areas, high degree of protection means any activity is forbidden unless specifically permitted either on a licence or without.
6. Competent authority means for the government land; the Minister of Lands; for Trust land, the Local County Council; for private land, the owner thereof.
7. Central Agricultural Board; Provincial Agricultural Board; District Agricultural Board.
8. General nuisance by-laws made under the Municipality Act, Cap. 136, forbid damage to trees in towns.
9. Muslim, F. (July, 1977). The legal perspective.
10. Valuable indigenous trees have been destroyed by various developers in towns.
11. Constituents of ash vary considerably depending on species and local availability of minerals. The major constituents of ash are however calcium, potassium, magnesium, sulfate, phosphate, carbonate and silicate.
12. Most of the forest fires is rooted in human activity. Edgell, M.C. and Brown, E.H. (1975). The bushfire environment of South Eastern Australia.
13. "Reserved areas" means Trust land in the North Eastern Province; Isiolo, Marsabit, Turkana and Samburu Districts.
14. Rylands v. Fletcher, L.R. (1868) 3 H.L. 330. If one brings or uses a thing of dangerous nature in his land, he must keep it at his own peril, and if it escapes and does damage to his neighbour, he is liable for the consequences.
15. Dawson v. Onslow (1931), 13 K.L.R. 32.
16. General Manager of the Uganda Railway v. Torton (1912), 8E.A.

7. The Grass Fire Act, Cap. 327 specifically excludes reserved areas from the fire provisions. section 4.
8. Bombing exercise did cause fire in Maralal forests in 1976.
9. "Shamba" refers to land usually under shifting cultivation.
10. Cullinan v. Vail (1922) 9 K.L.R. 46.
11. "Cattle" means all horned cattle, assess, bulls, camels, goats, sheep, horses, mules, oxen, geldings, pigs, mares, cows, and any young thereof.
12. Though unconstitutional, forest officers have at times craved for legal power to shoot stray cattle intentionally unattended by nomads. This is a view shared by Gordon, a lawyer and forester when recommending solution to overgrazing by Masai of Tanzania. Gordon, W.A. (1955). The law of Forestry. p.397.
23. In France, goats have statutorily been kept out of forest areas since 1669. Provisions of Article 78, Code Forestier barring goats from forest areas still in force. (6th ed of Code Forestier 1965 Art. 74).
24. Fence includes ditches, hedge, line of trees close enough to obstruct movement of animals and any other structure which maybe constructed with the aim of keeping animals from certain area.
25. Approximately 15 per cent of elephants died in Tsavo National Parks during the drought of 1970 - 71. (3,000 elephants out of 20,000). Maitai, C.K. (1973). The arrow poisons, op. cit. p.48.
26. Dr. Ndiritu of O.A.U. on desertification conference, Nairobi, 1977.
27. "Plant" means any member of vegetable kingdom.
28. "Disease" means any abnormal condition of plants which may be declared to be a disease.
- "Pest" any animal or vegetable organism harmful to plants or plant product.
29. "Licensee" any one who has legally been allowed to carry on activities in forest areas by being issued with a licence.
30. Disease is hereinafter used to mean diseases and pests.
31. Inspector means the Director of Agriculture or his representative duly authorised.
32. The Plant Protection (Importation) Order, section 4.

CHAPTER FIVEUTILIZATION OF FOREST RESOURCES1. INTRODUCTORY

(a) Unlike mines and oil fields where any utilization means depletion, forests present a renewable resource which, according to the ideal principle of sustained yield, could be utilised indefinitely. In Kenya, it is fair to say that forests provide economic goods that affect the life of every citizen. The degree of impact varies from the low income group, whose reliance on simple products such as firewood ranks almost equal to that on food, to the relatively affluent group who depend less on forest products for their everyday life. When other factors such as employment and the infrastructure from the processed forest products are considered, the role the forests play in social, political and economic development can hardly be overemphasized. Forestry is a viable business.

With abundant forest resources, a mere reservation law would be enough but as population increases and forest resources become scarce, legislation needs to become more stringent. The Forest Act, has a provision which empowers the Minister to make rules on the multiple use of forest resources in ways that will best meet the needs of the Kenyan people. Section 15. of the Forest Act empowers the Minister to make wide ranging rules on how each particular forest may be used. The Chief Conservator may further decide on the approach to attaining various end uses of forest areas. Technically, a tree grows to maturity and if not harvested, will eventually die and rot, and this is undeniably a waste of economic resources. Provided there is a provision of replanting trees to replace the utilized ones, utilization of forest resources is not incompatible with forest conservation. Hence, even in protection forests, provided exploitation is done very sparingly under close supervision, forests would produce wood besides satisfying their other major purpose.

b) There are some non-plant derivatives produced such as sand, murram and stones and these are included under the broad heading of "forest produce" simply because they happen to occur in forest areas. They are exploited in accordance with the conditions of a forest licence. In this respect, utilization of this category of products is depletion of a resource, but their contribution to forest revenue is so insignificant that a statement that forest resources can be managed on renewable basis, remains basically true. Utilization of mineral resources even in forest areas does not fall under the purview of the Forest Act. Mineral resources are Government property wherever they may be found irrespective of land ownership status, and are exploited in accordance with the Mining act.

(2)(a) It is appropriate to mention the legal provisions that govern the activities of the right holders in the forest areas. The utilization of forest produce by right holders falls in a unique category because these are people who have legal rights to use forest areas for various prescribed uses usually without needing to get a licence or pay for the produce.¹ Although the Forest Act is silent on the extent of damage that can be tolerated, there is an underlying principle that the right holders activity should not be harmful to the forests.² Repugnant activities could lead to extinction of the rights that have been statutorily provided.

(b) In the sense that these rights outlined in various Forest Rules, (see note 1) are for the community of a particular area, they are easements. If in these areas someone has individual title of ownership of land which is not adjacent to the forest areas serving as servient property, then the rights are personal to such person. Since however the rights are given on a community basis, as far as a person belongs to that community his rights

are inheritable by his issues. Unless the rights are extinguished as far as the communities of the areas mentioned by the Forest Rules are concerned, the rights are perpetual. Although the legal rights diminish the ownership of the property burdened, when exercised in moderation they can be compatible with good forestry. Most of these forest areas burdened with rights are on Trust Land and occasionally the government legal interests have had to be foregone when the land vested in the county council is granted to those individuals either on lease or commonly as a freehold. In other cases, excision of government lands has been made either to compensate the right holders for their rights or simply because the legal rights are so dominant that the ownership is nominal. In such cases, right holders obtain land by prescription or direct grant from the government.³

(c) In general, to avoid conflict with other provisions of the Forest Act, which otherwise stipulates possession of licence for any utilization activity in forest areas, these rules specifically say that in case of any conflict, the provisions of right holders shall prevail.

(3) Outside the forest areas, where land is private, there is no statutory regulation of exploitation of forest resources. On private land, people can harvest wood as they wish. Exploitation of trees is prohibited by Agriculture Act when soil erosion would occur as a result of clearing such vegetation.⁴ A farmer may therefore decide to use his wood on a sustained yield basis or use all of it now and buy wood from elsewhere in future. The forest policy tries to encourage farmers to maintain their own woodlots as a part of good husbandry, mainly to ease the pressure of wood on forest areas and partly to make farmers realize forest products without incurring the heavy costs associated with procuring wood products from distant forest areas. The Agricultural Act, Cap. 318 also recognises the

importance of woodlot for household requirement mainly. Section 2(1) of the Act, includes woodlot management as a part of agriculture.

) Legal provisions of utilization of forest resources can appropriately be described by examination of licensing, actual timber exploitation and the incidental use of land for agriculture, industrial and recreational purposes. Section 15 of the Forest Act, empowers the Minister to make wide ranging utilization rules in respect of forest areas and unalienated government land.

LICENSING

a) Theoretically any activity of utilization of forest produce should be done on a licence unless specifically exempted. A licence is issued gratuitously and it is a personal right which is not normally transferable.⁵ A licence issued under the Forest Act does not confer on any licensee right or title to ownership of land or any vegetation within the licence area.⁶ Title of any forest produce is transferred to the licensee only after the measurement. This means that for example in case of timber in forest, although one may be licensed to fell and extract such timber, it still remains the property of government until delivered to the licensee at the time of measurement when title of wood thus cut passes and is vested in the licensee.⁷

(i) Section 7. of the Forest Act empowers the Chief Conservator or his representative to issue licences for removal of forest produce or use of forest areas for other purposes such as grazing, cultivation or recreation. The section prohibits the Chief Conservator from issuing licences only in so far as they affect the wildlife, in which case licensing should rightly fall

under the Wildlife (Conservation and Management) Act. There is considerable amount of delegation in issuing licences among the Forest Officers, but such licences must be issued under the conditions approved by the Chief Conservator as per section 7. of the Forest Act. The licenses also must be subject to any royalty or fee currently prescribed by the Minister.

(ii) Usually the degree of delegation will depend on the type of licence. A licence to extract minor forest produce is issued locally, under the guiding principle of sustained yield. When an Officer does issue a licence contrary to the overall policy of the Department, he may be departmentally disciplined but usually such licences are honoured to avoid embarrassment to the public and the Department. Licences to extract major forest produce are usually centralized especially where licence is for more than one year duration. Most of the licences expire at the end of one year and are commonly called short term licences. Renewal of such licences ideally depend on whether there is more available material which is not committed to long term licensee who are supposed to have made higher investment in anticipation of sustained forest produce supply.

(b) Licence Conditions:

Invariably the licence must have the name of licensee. This is essential for effective control of all activities associated with utilization of forest resources. A licence also must specify the activity for which it is issued, the duration and the area of operation in the forest area.

Connected with the area of operation is the quantity of the forest produce that is supposed to be removed as per the licence. The quantity to be removed is essential because the main aim of issuing the licence is to regulate the rate of consumption. Licensing can be very effective regulatory mechanism when dealing with renewable resources.

i) In practice there are cases where licences are issued without showing precisely the quantity of a particular forest produce in a particular area. For example in a case of indigenous forest, an inventory figure is highly approximate when compared with a plantation inventory. A licence in such cases would not state a very accurate quantity of material. Licensees are aware of the problem of estimation and the Chief Conservator is not responsible if they do not get the exact quantity of material stipulated in the licence.⁸ In a long-term licence, it is usual to stipulate the minimum and maximum quantity of material for the licensee. The Chief Conservator has power to reallocate material for which a long-term licence is issued.⁹ The situation usually arises when a licensee does not take material by the right time and the overall quantity is accordingly reduced. There are also rare cases of accumulation of material when no other users are competing for such material. This would usually occur in remote forest areas of the country or where a particular commodity is not in big demand.

ii) Licences being merely permission to do what would be unlawful in forest areas, they differ depending on the activity for which they are issued. Section 15 of the Forest Act empowers the Minister to make rules on condition under which a licence may be granted, refused or cancelled. The Minister also has power to make any regulation on how a licensee may conduct his activities in forest areas and he can also regulate the unalienated government land pursuant to section 15. of the Forest Act.

iii) For example, one of the conditions on long-term licensees is that they should extract logs in such way that damage to the remaining trees is not sustained. They should also be careful about soil erosion. It is generally stipulated that a licensee will be efficient in his utilization method. He should hence cut trees very close to the ground and take all

merchantable material and hence avoid wastage. The equipment for processing wood products should also be efficient and any pollution as a result of any industrial activity is normally prohibited as a condition in a licence.

(iv) For better extraction of forest produce, a licensee can construct roads or a light railway. The Chief Conservator can levy other users of such road and pay the licensee such proportionate amount as reasonable. Otherwise the Chief Conservator has a control on such roads and has a free use of them. When a licensee winds up his job the roads are left intact and he is not entitled to any compensation for construction of such roads.

(v) Any serious breach of any rules made under the Forest Act or provision of the Act itself could lead to suspension or cancellation of licence. A minor offence will not usually result in drastic measure such as cancellation of a licence. In accordance with section 15 of the Forest Act, a licensee can appeal to the Minister if aggrieved by the Chief Conservator. For a long-term licensee, he can also give the Chief Conservator of forests six months notice if he wants to terminate the licence.¹⁰ Likewise, although it rarely occurs, the Chief Conservator can give a licensee reasonable notice in writing where the licensee has failed to comply with the provision of licence. In serious breach of licence conditions, the Chief Conservator can suspend the licence automatically pending investigation of the issue in dispute.

(c) Trust Land Licences:

(i) The Trust Land Act, makes a provision of exploiting timber and other forest produce under a licence. Section 37(1)(b) stipulates the

county council may issue licences for removal of forest produce, not included in the forest areas. The removal of timber is subject to any condition such as payment of certain royalty as the council may agree with the Minister. Subsection (2) of section 37. of the Act empowers the council to appoint a licensing officer for the purpose of issuing licensing for grazing, removal of forest produce, taking of minerals, and such other activities such as wayleaves and temporary labour camps. The licensing officer appointed is usually District Commissioners in respect of grazing and removal of forest produce from Trust Land.¹¹

(ii) Section 65. of the Act, stipulates among other things that the Minister may with the approval of the council concerned make rules relating to Trust Land in respect to issuing licence for cattle grazing and removal of forest produce in any particular area of Trust Land. He can extend any provision to the whole of the Trust land. Pursuant to section 65., the Trust Land Rules for various concentrations of agricultural activities have been made. In these areas, a licence which is very similar to lease is issued for occupation and use of the plots for agricultural activities. The conservation and use of trees on plots licensed to people are done strictly in accordance with the licence. The licence entitles the licensee to occupy land for the rest of his life and thereafter his nominated successor for the remainder of his life and this is of course subject to any condition such as payment of necessary dues and any other condition which may be laid down by the Settlement Officer.¹² In some cases clearance of trees to make room for intensive farming has been made by this licensing policy. Such trees cut are used for building or for firewood. There is no replacement. In other cases where adjacent land is fragile, farmers have been prevented from exploiting trees as a condition of a licence.¹³ Generally where the intensive agricultural projects have taken place along fragile land especially

on the major rivers, patches of forests have given way to agricultural activities. Elsewhere in Trust Land, licensing is simply a means of collecting revenue in practice. The licence itself is very simple and has a provision of only the name of licensee, the quantity of forest produce to be removed and the district where such produce is to be obtained. Conditions can be made to go along with the licensing, but as it is, it contains the bare minimum information.

(iii) Licensing for occupation and use of land is made where land is not set apart. When land is set apart in accordance with section 13., leases are issued to the settlers in various plots. The settlers have also to abide by any condition that may be put by the Settlement Officer. As a matter of practice every settler is given a copy of rules which he undertakes to comply with while he continues using the particular plot of the land.

3. MARKING

(1)(a) Subject to the conditions of licence, forest produce in cases of trees are marked individually by a forest officer. In case of indigenous forest where a plantation of exotic species is contemplated to be established, an area to be exploited is delineated and it is an offence for a licensee to exceed the area thus earmarked. Individual marking of trees is used when thinning is to be carried out, whether the thinnings are merchantable or not. The main idea here is to leave enough room for the remaining crop to improve in volume and quality. Sale of the thinnings is only incidental and the more scarce the material is, the more it can be sold, in any given locality, for various end uses.

(b) Section 9.(a) of the Forest Act makes it an offence for anyone to mark or affix on any forest produce, a mark used by the forest officers to indicate that the produce can be removed or that it is a government property. The section further stipulates that it is unlawful to meddle with any mark or document issued under the Forest Act. Section 9.(b) contains provision prohibiting also removal of any part of tree bearing a stamp; or any mark, presumably to avoid a loophole whereby one can ingenious chisel out a mark on a long and dovetailing the piece thus cut into another log. The earlier legislation (Kenya Forest Ordinance 1911) did not have this provision.¹⁴ A simple marking involves blazing the tree to be removed or any colouring can be made. Before removal, forest produce is arranged in a convenient way for marking and a hammer with the departmental mark is used.

(c) Subsequent legal identification of forest produce really depends on the mark used by the forest officer, either before or after measurement. Section 13. of the Forest Act stipulates that in any proceeding, when the question arises as to whether the forest produce is obtained from a forest area, it will be assumed to be so obtained unless the contrary is proved. The section is meant to assist forest officers or anyone else authorised to police forest produce which might be obtained illegally. In practice, if the forest produce does not bear any forest mark, which serves as prima facie evidence that it is a forest produce, it is very rarely that such goods will be queried, although the law makes this provision. The provision of section 13. of the Forest Act departs from the settled principle of law that one is innocent until proved guilty. Without considering whether the provision is justified in holding this view on the undifferentiated forest goods, any authorised officer would hesitate to interrogate anyone

assessing unmarked forest produce for fear of excessive nuisance unless goods are in the forest area or in the immediate vicinity.

In private land, there is no legal provision requiring anyone to mark his trees before utilization. Where trees are very few, the owner can distinguish the trees to be sold, and when they are many he may mark them in the forest area or simply delineate an area of operation.

In Trust Land, although there is a provision in the Trust Land Act licence anyone wanting to remove the forest produce, the unwritten policy "help yourself with the cream." The forests or trees being exploited in this case is indigenous species and payment is done on the quantity presented for assessment by the Licensee. There is no question of predetermining what will be removed in practice. Any situation where marking for better utilization would be made would be an exception rather than the rule.

FELLING AND MEASUREMENT

1)(a) Section 15(1) of the Forest Act empowers the Minister to make rules on felling and working of the forest produce. In practice an inventory of stock is made and felling programmes are made on the basis of such estimations of the volume of wood in the forest. Although actual sale of forest produce can be made on such estimated volume, sale of logs is done on true measurement of volume after the trees has been severed and crosscut into convenient sizes.

To have logs ready for measurement, the Chief Conservator has absolute discretion in case of indigenous forests whether to clearfell or remove logs on a selective basis. In the case of a plantation, there is an accepted practice whereby thinning is done in the course of the rotation. When the trees are mature, there is not much option left except to clearfell such plantations. The method is particularly favoured by the industrialist

from the logging costs point of view. Besides costs of extraction, productivity is higher in clearfelling than in selective cutting. From a forestry point of view, the method is justified when regeneration of shade-intolerant species is desired. Also in the case of indigenous species, the desire may be to replace the trees by different species, in which case clearfelling becomes necessary if the species desired is also shade-intolerant. It is quite possible in the case of indigenous trees to leave some trees as nurses if the desired species is shade-tolerant. The establishment of the current 162,717 hectares of plantation, mainly of exotic species, has been preceded by clearfelling of indigenous forests and in some few cases there has been planting of open glades. These plantations have mainly been monoculture and even-aged for each unit of plantation, and with proper management a more ascertainable sustained yield is possible than with indigenous forest which grow slowly with indeterminate composition.

(b) Selling trees on standing volume is being contemplated¹⁵ but in the meanwhile, the Forests (General) Rules 1969 stipulates that true volume of logs should be obtained and the royalty calculated should be based on such volume. Measurement is in metric units. A licensee is usually responsible for arranging wood in a convenient way before a forest officer can measure. A forest officer has power to refuse to measure wood which is not conveniently arranged for measurement purposes. In all cases of measurement, to avoid complaints on the volume computed, a representative of the licensee has to be present and in fact has to endorse the measurement figures.

In arriving at the volume to charge, the Chief Conservator is empowered to give defect allowances by the Forests (General) Rules either for a certain area in general after sample tests or on an individual basis pursuant to section 5. of the Rules. He can backdate such defect allowance

if in his opinion such decision is justified. Where wood is generally deformed, the Chief Conservator has power to have it measured in form of stacks and appropriate conversion factor derived experimentally can be used to determine the true volume of wood.¹⁶ Firewood is conveniently sold as stacks and the rules have made provision for sale of small quantities of wood.¹⁷ Other forest products better assessed in running metre or weight are correspondingly stipulated in the Forests (General) Rules, 1969.

(c) Measurement on the Trust land is made when the county council officials can manage and the Forest Department is not consulted to see the measurement are being done accurately. In the countryside, it would be very unusual for anyone to calculate the volume of a piece of wood before selling it or using it for some other purpose. People versed with forestry practice might do some measurement for the sake of comparison, but this would be an exception rather than the rule. Firewood sales however can be said to be based on a measured quantity. Similarly charcoal is sold in bags and when marketed in any case there is a price control based on weight but regardless of the grade and the species from which charcoal is obtained. Consumers however have tastes and given a chance to choose they know for example that charcoal from some species burns better and longer - giving on the whole more calorific value than others. Some consumers certainly would be willing to pay more for some brand if differentiated in the market.

(d) In practice, measurement of forest produce presents a formidable task. Many manhours are expended in measurement. A survey carried out by the writer indicates that a forester in an average forest station spends 21 per cent of his time in measurement of forest produce (see table 5). Therefore for about 100 foresters, it would mean 5670 mandays are spent on forest produce measurement per year. A harrassed forest officer often uses

visual estimation instead of measurement and this has led to loss of substantial amounts of money either to the Government or the licensee. In other cases, use of defective measurement cannot be ruled out.¹⁸ With the present method of measurement, a forest officer in a busy station would hardly have any time to do other duties and forestry practice is bound to suffer somehow. For example a forester spares only 5 per cent of his time to manage protective forests, important as they are. (see table 5). Ideally, measurement of forest produce should not be delegated to officers junior to a forest officer in a station. In practice however because of the amount of work involved measurement is delegated to junior officers and the system then becomes fraught with mistakes especially on the junior employees who have had very little formal education.

(2) Working and Extraction:

To regulate the removal of forest produce, section 15(a)(i) of the Forest Act empowers the Minister to make rules on working and removal of logs. Generally in the forest areas, besides arranging logs in a convenient way to be measured, a licensee is not supposed to conceal any tree stump. Section 9(c) stipulates that it is an offence for anyone to cover or conceal tree stump in forest areas or even on unalienated government land. He should also not destroy or remove any part of tree stump. For inspection purposes, a tree stump naturally should be accompanied by logs cut. If during measurement, a forest officer sees a freshly cut stump, he can demand the logs and if these are not produced, he has a prima facie evidence that timber has been removed illegally. Many other deductions which are useful for efficient management of forests, can be made by an observant forest officer. Crown and branchwood remains the property of government and can be disposed of by the Chief Conservator in any manner consistent with his powers.¹⁹ If other logs paid for are not removed after the expiration of

TABLE FIVE

**FORESTERS DISTRIBUTION OF TIME ON MAJOR
ACTIVITIES IN FOREST STATION**

<u>ROYALTY AND FEE PRICING</u>	% TIME SPENT
(1) MEASUREMENT OF FOREST PRODUCE (mainly logs measurement)	21
(2) DEVELOPMENT PROJECTS (Buildings & roads)	17
(3) ESTABLISHMENT AND MAINTENANCE OF PLANTATIONS (land preparation, silviculture work, protection & survey etc.)	29
(4) PROTECTIVE FOREST MANAGEMENT (water catchment and soil conservation)	5
(5) MISCELLANEOUS ADMINISTRATIVE ACTIVITIES (office work and general policing)	28

licence, the ownership reverts to the Government and the licensee is not entitled to compensation and this condition is notified to the licensee as a condition of a licence or otherwise. The branchwood and any wood not removed from the forest area in time can be disposed of by the Chief Conservator in any manner consistent with his powers.

5. ROYALTY AND FEES PRICING

(1)(a)(i) Forestry as a business generates revenue in the form of royalties and fees. In Kenya royalty is payment to the Government as the landowner for removal and use of forest produce. Royalty signifies payment for that type of forest produce which can be expressed as a unit volume or weight and utilization usually involves removal of the produce either processed or as a raw material. Fees on the other hand, are payment for use of forest areas for activities such as grazing and cultivation. Here the fees are based on the number of cattle and the area being cultivated. Hence, fees are payment for the use of forest resources in situ. Section 15 of the Forest Act empowers the Minister to make rules on prescribing fees and royalties which are revised from time to time. Fees account for a very small fraction of total revenue realised by the Forest Department (about 8%). The bulk of revenue is from royalties, mainly from sale of logs and fuelwood.

(ii) The royalty is fixed one whereby the Government offers the forest produce at a price currently fixed pursuant to the Forest (General) Rules, 1969 and is uniform throughout the country for any given grade of a species. Sale by public auction or tender which would certainly mean different royalties for the same grade of species due to proximity of market is not practised in Kenya. In fact, the Forests (General) Rules 1969

which govern utilization of forest produce do not apply in the case of sale by auction, tender or any private agreement resulting to higher royalty.²⁰

(2)(a) The Forests (General) Rules, 1969 which essentially make payment of every forest produce mandatory, do not lie in respect of some forest produce when the user is a right-holder. The various forest rules on right-holders stipulate that Africans of the respective areas can take free of charge dead wood for their domestic use. There is a constant stress that such wood must not be for sale or barter. The rules also allows the right-holders to cut trees for building purposes free and without licence, for building their own houses. There is no limit of the number of huts and this will depend on for example the number of wives a man has, or the extended family he has to cater for. In most cases there are schedules of trees which should not be felled without express permission of the forest officer. It has been held that a right-holder who fells such reserved prohibited tree without authority is guilty regardless of the size of tree cut.²¹

(b) Without a licence or charge the right-holder generally can collect wild berries, grass for thatching houses and can also use forest areas for honey production. Usually when it is a question of cutting healthy trees, forest officers have to mark such trees. Utilization of dead wood, honey collection and wild fruits need not be authorised.

(3)(a) Initially royalties were fixed arbitrarily but nowadays, they are a fraction of the average selling price of sawn timber. To get the average selling price of sawn timber, sawmills are legally bound to send returns of their sale each year indicating quantities of timber sold by species each year. Section 8(7) of the Forests (General) Rules, 1969 makes

it an offence for anyone to send information which he thinks is false. The sawmills are required by the same rules to send any other information such as audited reports as the Chief Conservator may require and they have to comply with such request.

From the information thus submitted, the Minister computes the average selling price of sawn timber free on rail mill station. From this information the royalty of various species based on size of logs and the grades are calculated.²² The royalties thus calculated are gazetted at the end of each financial year and are effective from 1st July of each year. The Forests (General) Rules makes this provision of revision. Section 15 (a)(1) of the Forest Act, empowers the Minister to make regulation on sale of forest produce. He can when it is necessary adjust the price of royalty before the end of the year after consulting the Chief Conservator and the people that are representative of timber industry. If the Minister is satisfied that he has not had enough information in respect of certain species of timber, he can leave their royalties unaltered and the last royalty to be revised stays in force.

(b) Other than the small quantity of firewood which is based on headloads per month, the Chief Conservator is empowered by the rules to charge the royalty he thinks is fair for the firewood. The Chief Conservator's representatives authorised in writing can also fix a royalty on firewood. The provision is meant to make firewood fetch more money especially in areas near consumption centres like Nairobi and other towns. Hitherto production of firewood has been a secondary objective in forest management since the earlier failure of firewood plantations to cater for railways which switched from wood burning to oil burning locomotives. If the prices

rise high enough management of forests for firewood production could very well compete with production for other uses.

(c) In forest areas, there are licensees who pay for wood on a cash basis. These licensees cannot theoretically remove any wood until they pay for all of it. If a forest officer allows wood to be taken without payment and consequently the licensee defaults, the Forester is responsible and is subject to disciplinary action. As for the long-term licensees, they usually have a security which they renew yearly. The licensees can take logs as soon as they are marked and the measurement entered in an accountable document. They can then pay anytime before two months expire. If two months expire, then an interest of $\frac{1}{2}$ per cent per month is charged on the unpaid debt. Of course, the Minister can waive any interest payable under the rules.

(d) In practice the licensees continue paying and as long as the debt owing to the Government at any time does not exceed the security, the licensees can continue taking logs on a credit basis. When the debt just equals or slightly exceeds the security, marking of logs for the licensee is immediately halted and as the Government in this case is the only seller of logs, unless the licensee is bankrupt, he will somehow pay without delay and marking is resumed.

(e) Other minor forest produce such as stone and cut grass are priced arbitrarily and royalty is outlined in the second schedule of the Forests (General) Rules, 1969.

(4) In rural areas, the price paid for forest produce depends on bargaining and the agreed price will usually depend on the scarcity of the commodity. However, different people will be able to fetch different

prices for their commodity depending on how well they bargain. The bargain itself is naturally influenced by factors such as whether the vendor is desperately in need of money. In most cases, sale is per unit tree and the quantity is assessed visually. One may also sell merchantable trees on an area basis without doing any detailed inventory work. For both vendor and the purchaser, valuable consideration is based on unit volume, however inaccurately it maybe assessed. As for other surface resources such as the murram whose exploitation certainly may mean removal of trees, the price obtained usually depends on how much the user such as Road Authority or any private road contractor is willing to pay. There is not much in the Forest Law or other laws covering the restoration of the surface after mine working but it would appear that any royalty if it takes account of surface destruction and the impossibility of complete restoration would be considerably higher and the tree utilization might be more profitable than the case is now. In other cases, clearing of forests for agricultural purposes is considered as land improvement,²³ and in such case wood may be assigned gratuitously or in exchange for labour of doing the clearing. This is a situation where trees which may have taken years fetch less than ten per cent of their value.

(5) The local authorities may charge a royalty for forest produce in the land vested in them. Section 37. of the Trust Land Act empowers the county council to fix fees and royalty for any of the forest produce in Trust Land areas not catered by the Forest Act. Pursuant to this section, the Trust Land (Removal of Forest Produce) Rules stipulates the royalty to be paid for various species of wood. The timber royalty per unit volume within any species is on a pro rata basis and grade is immaterial. Fencing posts, a major produce, are charged on the number regardless of size and

there is some grade classification in case of poles. Generally, the royalty is much lower than those charged in the forest areas and this accounts for preferential exploitation of forest produce from the Trust Land. The possibility of not paying for all forest produce, a loophole inherent in the overall utilization of forests in Trust Land, further makes conditions conducive for exploitation of county council forests.

(6) Tied up with the timber payment is the question of trees which necessarily have to be removed for various works which have legal rights, implied or otherwise. Section 90. of the Government Land Act, stipulates that when destruction of planted trees, bushes or shrubs occurs as a result of activity for public work such as telegraphpoles or dams, the owner of trees shall be compensated for the trees at a reasonable sum not exceeding market value. A similar provision is made in the Wayleaves Act, Cap. 292. Section 6(1) of the Act, stipulates that Government shall make good damage done to any tree in course of installing sewer, drain, or waterpipe. In the absence of recognized prices in the rural areas, the market value should be nearly the royalty government charges in forest area and in case of trust land the royalty tabulated by the county council.²⁴ The emphasis here is on planted trees and a body could very well refuse to pay for a tree occurring naturally, however valuable it maybe to the owner. In the event of disagreement on the price, section 146. of the Government Land Act makes a provision of referring the matter to arbitration.

(7) In practice the Forest Department has been revising the royalty of planted wood since 1969, and revision provision is made by the Forests (General) Rules, 1969. It was a condition of the second phase of the World Bank Loan, among other conditions, that the royalty of plantation timber should be increased at a compound interest of ten per cent plus an

inflationary rate for the five years that the loan would continue being drawn. The royalty for planted wood before 1969 was thought to be too low to give internationally accepted internal rate of return. Hence the royalty had to be increased annually for the country to qualify for the World Bank Loan. There is nothing to stop the Government from making a special rate for any industry in the country.²⁵

6. OCCUPATION OF LAND

(1)(a) Quite often, to efficiently carry out utilization of forest resources, which are quite bulky in many cases, it is necessary to occupy government land. In the case of forest areas, section 15(a)(ii) of the Forest Act empowers the Minister to make rules of general application in regard to occupation and use of forest areas for various purposes such as cultivation, grazing and industrial activities. For the purpose of establishment, maintenance and marketing forest produce, the government employees do stay in forest areas under the conditions approved by the Chief Conservator.

Significantly, the growth of forest production has been accompanied by large number of resident workmen and their families in forest areas. These people have been employed for planting and general activities associated with management of forests. The Forests (Workmen's Residence) Rules 1965 made under section 15 of the Act stipulates that an authorized officer may grant a licence to a forest worker, whether retired or active permitting him to reside in any specified forest area and carry on the activity of cultivating and grazing his cattle in accordance with any condition imposed by the Chief Conservator.²⁶ The shifting cultivation allowed has been very useful in lowering costs of establishing trees on the whole. The licence to cultivate does not confer any right over or in the land.

The rules also stipulates that there shall be paid by the licensee any fee for grazing and cultivating as notified in the Gazette.²⁷ A breach of any condition could lead to termination of contract of service in which case a termination notice of one month is issued.

The forest workman must then remove himself within the time notified and may afterwards come to harvest his crops in the forest area. Otherwise where there is no breach of contract, employees continue enjoying benefits as per the rules.²⁸ Even when they retire, they still live in the forest areas with their extended families. Similarly in practice, although the Forests (Workmen Residence) Rules stipulate family of a deceased forest worker should move out of the forest area within nine months, family of deceased forest workmen whether he was retired at the time of death or still working, do continue living in the forest areas.

(b) Apart from Forest Department employees, some right-holders have statutory permission to live in the forest areas without licence or payment of ground rent.²⁹ Other rules in respect of right-holders permit occupation of forest areas for ceremonial purposes such as circumcision and general worship.³⁰ Such rights of occupation are valid only during the period of the ceremonies which from time immemorial have taken place in the particular forest areas.

(c) The occupation of forest areas for industrial purposes is a legitimate purpose recognized by the Forest Act section 15(a)(ii). For example in case of sawmills and other wood-using industries, a need to site such industries in forest areas mainly to minimize the transportation cost of raw material has always been a fact of forest management. Any wood-using industry in the forest area has to abide by conditions of licence. Such

industries also employ a substantial number of employees. The management is responsible for the actions of the employees in accordance with master-servant relationship.³¹ Usually there is a condition of licence that the Chief Conservator has to approve the labour village layout. In all cases for occupation of land for industrial purposes, there is payment of ground rent for the area occupied in such way that it cannot be used for other forestry activities. In case of a sawmill, the fee is fifty shillings per hectare per annum.

(2) Temporary Occupation of Land:

(i) The Government Land Act, 1970 makes a provision for the Temporary occupation of any unalienated government land. Section 40. of the Act stipulates that an annual licence continues in force until one is given three months notice to quit. There is also a provision that the benefits of such licence can be transferred with the consent of the Commissioner and conversely the benefits are registrable and conditions binding to successors including minors.³²

(ii) It is a condition of licence that a rent or any other charge shall be paid when due. The licensee should also keep the area occupied reasonably clean and dumping of refuse and rubbish is generally forbidden as per sections 42. and 143. of the Act. Failure to observe these conditions can lead to forfeiture of licence and such forfeiture does not extinguish the debt owing to the Government. Section 79. of the Act refers. When forfeiture is commenced, any acceptance of purchase money does not signify waiver of the forfeiture which is already commenced.³³

On the expiration of a licence or when the licensee wants to leave the land, he can remove his temporary structure or any building he may have erected. If the building is not removed, it becomes government property and no compensation is made to such a licensee. In the case of a lease, the licensee is entitled to remove one's property three months after the termination of lease.

(iii) The temporary occupation licence is issued to people wishing to utilize forest resources or to carry out welfare activities in the forest areas. In the case of forest areas, the Commissioner of Lands would normally clear with the Forest Department to ensure that issue of such temporary occupation licence is not inconsistent with good forestry practice. Unlawful occupation of government land would lead to prosecution without proof of damage.³⁴

Occupation of Trust Lands is catered by the Trust Land Rules where people have to be resident on land either set apart or not set apart. Exploitation includes utilization of forest resources. People wanting to remove timber from trust lands can easily get a licence to enable them to occupy land for the purposes of for example, extracting and sawing timber.

(3) Private Land:

(i) On private land there is no problem of occupation for utilization. On rare occasions a pitsawyer may want to camp in a place for converting logs to boards. This is however a private contract and any breach of such agreement would be dealt with as a civil matter. Otherwise people use the wood in their smallholdings and any unlawful occupation of land amounts to trespass. For newly acquired farms, the owners may have to agree with the squatters on the land. Usually, while such squatters cannot

be evicted until they get an alternative place to occupy, their activities are limited. Nevertheless, they have utilized forest produce to a considerable degree especially for firewood and charcoal both for sale and their use. In other cases, especially on big farms, people occupy land carrying on activities of cultivation and of necessity exploit trees for various purposes. If left uninterrupted for fairly long, they hope the adverse possession will ripen to prescription.³⁵ In an effort to have undisturbed possession, activities such as cultivation, building, creation of cemeteries, all of which involve clearing and use of wood, are some prima facie rights of occupation. If the occupation and the associated activities are acquiesced in for a reasonably long time, ownership of the particular land can be gained and the settlers continue using the land unless one with a better title establishes a case. Today, forests on private land have been overexploited mainly through the process of adverse possession.³⁶ The over-exploitation has been most significant on large scale farms mainly during the transfer and transmission or usually when any disposition is contemplated by the resident employees.³⁷ Exploitation of even the protective forests has been a common feature in the country. In this respect, the law can facilitate forest conservation by allowing death duty to be paid only at the time of harvesting timber and not at the time of death of the owner as is the case with other real property.³⁸ In Kenya death duty on any property is payable within twenty-eight days after assessment notice.³⁹ Provision of paying 5 equal instalment at 6% interest is the only provision of deferring payment. In practice an inheritor would have to fell timber to pay death duty. On the other hand, if the Estate Duty Act made provision for deferring payment of death duty up to the time of harvesting timber, most private people would be encouraged to conserve forests. As it is, even deferring the estate duty for 5 equal payment is complicated by the possibi-

lity of demanding a security. A failure to pay estate duty when due, further complicates the relief, for an interest of 9% is chargeable.⁴⁰

(ii) Even the owners of large scale farms which are mainly government leases do overexploit wood in anticipation of disposition. Theoretically where the lease is silent on the Doctrine of Waste, the lessee should be impeachable for waste, in accordance with common law which is applicable in Kenya when Acts are silent on any matter. It is a settled principle that when a tenant is impeachable for waste, some proportions of money from sale of timber should be capital to protect inheritance and generally the remainderman or the reversioner. In most cases three quarters is set aside as a capital and one quarter of proceeds goes as rent and profits. Section 29 of the Trusts of Land Act, Cap. 290, imposes a duty on the trustee for sale to act in compliance with the Doctrine of Waste in apportioning three quarters and one quarter of timber revenue to capital and income respectively.⁴¹ A tenant who is not impeachable for waste can utilize trees as he likes without the obligation of setting aside some money as capital. He would however be liable for equitable waste if there is harvesting of ornamental trees and other plantations such as windbreaks which are not meant to be harvested.

(iii) Where however the land is used primarily for growing wood which is harvested periodically, the Doctrine of Waste does not apply. The Doctrine of timber estate seems to have had an early legal attention and the view of the common law here is that the harvesting of a timber crop does not injure the inheritance because there is a normal succession of timber crops.⁴² It is like any other form of cultivation and the tree harvesting is a part of annual fruits.⁴³ Although common law in the last

(1) Section 13 of the Forest Act empowers the Minister to use forest areas for grazing and cultivation purposes. In this way a fee is charged to the use of forest areas for agricultural activities. The Forests (General)

resort could apply in Kenya, the meaning of "timber" would certainly have to be redefined because common law recognises timber as being only some temperate species and this also depended on the locality.⁴⁴

For tenants impeachable for waste, the common law view holds that they can cut wood for general maintenance of estate and thinnings generally do not fall under purview of the Doctrine of Waste. Section 33 (1)(a) of the Trusts of Land Ordinance concurs with the views of common law by stipulating that Trustees for sale can fell timber or cut underwood from time to time in the course of repairs or otherwise. Underwood here would include thinnings and any other wood whose removal would improve the remaining crop. Underwood may or may not be marketable.

(iv) In practice farm leases are very long, 999 years, and the proprietors of such leases behave like proprietors of freehold. It is only the trustees for sale who seem to be impeachable for waste according to The Trusts of Land Ordinance. In most cases for short subleases in towns it is usual to put a clause of non-destruction of ornamental trees, and even without such clause such covenant would be implied in accordance with equitable waste.

(v) In any case a proprietor of land or lease may give anyone a licence to occupy land for utilization of forest produce. Such licence is not registrable.⁴⁵ If any activity by the proprietor would adversely affect the licensee the course open to such licensee is to lodge caution pursuant to section 131 of the Registered Land Act, 1977.

7. GRAZING AND CULTIVATION

(1) Section 15. of the Forest Act empowers the Minister to use forest area for grazing and cultivation purposes. In this way a fee is charged for the use of forest areas for agricultural activities. The Forests (General)

Rules state that the cultivation fee is fifteen shillings per hectare. The licence is on an annual basis but can be renewed as long as the land is not required for planting or for some other purposes. Such licence contains any condition that Chief Conservator may want to impose. The special conditions which go along with the licence for example are to pay the fee demanded and give an undertaking to surrender land when asked to do it. Other activities which are inconsistent with good forestry are forbidden. In this respect forest areas have contributed greatly towards the country's food production.

A fee of one shilling per head of larger animals such as cows and horses (bovines and equines) is charged per month. For sheep, the fee is twenty cents per head per month. The young ones are charged like the adults. The essential element in a grazing licence is that animals should be kept away from the trees that need protection. The licence is subject to availability of grass and the herdsman is required to refrain from burning or cutting vegetation unlawfully. In this context forest areas have contributed greatly especially where the surrounding community are short of land. There are cases where the forest officers would hesitate to plant trees for fear of depriving the adjacent community of a grazing facility. In principle, planting of trees takes precedence over grazing.

(2) The rules that govern the activities of the right-holders generally allow free grazing of cattle on open grounds to the community as a whole. However, this is usually in reference to open glades usually adjacent to the communal land. As for the glades in the interior of forest areas there is more restriction. Grazing is open to some particular recognised users and in this case the local administration assists in keeping a register.

The carrying capacity of any area is a prime consideration and goats are generally forbidden in the forest areas.⁴⁶ Other rights of grazing in the forest are given where there is a necessity to have access to watering points and salt licks which from time immemorial have been used communally according to customary laws of various areas.⁴⁷

The Suk tribe and the people of the Baringo are allowed by the respective rules to cultivate forest areas which have been chosen by the local administrative officers or forest officers.

8. MULTIPLE USE OF FOREST RESOURCES

(a) In practice any piece of forest area can be used for various purposes, the weight of each use depending on the objective of the government and usually on the pressure various users are having on the limited natural resources. The Forest Act itself does not stipulate the multiple-use of forest. Conflict begins when two uses cannot be accommodated at the same time and then the various users naturally exert pressure, each group trying to have its use being given priority. The Chief Conservator has absolute discretion in deciding to what use each forest should be put.

(b) Besides use of forest areas for the purposes mentioned above, forest areas are used for wildlife and recreation. These uses are secondary in forest areas but are primary in national parks. The Forest Act acknowledges use of forest areas for wildlife and recreation by its provisions which prohibit hunting unless authorised under the Wildlife (Conservation and Management) Act. The creation of nature reserves in forest areas is aimed besides other uses at providing amenity. Amenity is difficult to define and it is just as well that the law does not go into

it because it is very much a matter of individual taste. However, it is generally accepted that amenity is that appearance and layout of towns and country-side which gives a comfortable and pleasant experience to an average person.⁴⁸ To many people, some combination of trees either occurring naturally or planted can produce the amenity value. Treeless landscapes are monotonous and lack the variety and life of areas that are adorned with forests, woodlots, shelterbelts, orchards and ornamental trees. The Forests (Nairobi Arboretum) Rules under Forest Act are meant to regulate use of the Nairobi Arboretum for the recreational purposes. This unit of forest area is highly used as a park mainly by towns people and tourists.

(c) The Forest Act also recognises the importance of commercial fish production. The Forests (Fish Hatcheries) Rules made pursuant to section 15. of the Forest Act stipulate that the Minister can by a licence regulate the use and occupation of a forest area for commercial fish hatcheries. In practice, there are a number of fish hatcheries in the forest areas. In principle fisheries authority can identify any area they want for fish farming and provided they or any other group of people do not behave contrary to the various conditions of the licence, they can carry out fish farming in forest areas. Trout particularly like the cold unpolluted water generally found in the forest areas.

12. Trust Land (North Yatta, Yatta Plateau and Ichanga) Rules, section 8(g).

13. Section 8(g) of the Trust Land (North Yatta, Yatta Plateau and Ichanga) Rules, L.N. 101/1959.

14. Someone did actually dig out a stamp mark and fixed it on another tree. He escaped liability under section 27 of Kenya Forest Ordinance 1911 because the accused could not have counterfeited, altered, obliterated or defaced the mark. Gordon, W.A., (1951), The Law of Forestry, pp. cit. p. 272.

15. Measurement of standing volume being done for pulp and paper mill.

FOOTNOTES

1. The following rules give various communities legal right to use forest areas:-
 The Forests (Lembus) Rules, Cap. 176(1948) Sub.leg.
 The Forests (Nandi) Rules, Cap. 176(1948) Sub. leg.
 The Forests (Elgeyo) Rules, Cap. 176(1948) Sub.leg.
 The Forests (Tugen-Kamasia) Rules, GN 704/1949
 The Forests (West Pokot) Rules, GN 1648/1954
 The Forests (North Nyanza, Kakamega and Bunyala) Rules, L.N.275/1959.
 The Forests (Meru) Rules, L.N. 502/1959
 The Forests (Kwale) Rules, L.N. 424/1960.
2. Right-holders are not owners of property and the exercise of these rights should not swallow or render property valueless. Baden Powell, B.H. (1882). Manual of jurisprudence for forest officers. p.102.
3. A total of 6,128.1 ha. were excised in Lembus for the use of right-holders. L.N. 207 of 1965.
4. Section 48(1), Agriculture Act, Cap. 318.
5. Unless statute says otherwise, licence is personal privilege and comes to an end on death of licensee. Roger, M. (1969). An Outline of commercial law in East Africa.
6. Condition 54 of licence to extract and mill timber.
7. Condition 19 of timber licence, delivery of logs.
8. Condition 25 of timber licence, shortfall in timber estimated.
9. Condition 14 and 15 of timber licence, withdraw of clearfells and thinnings.
10. Condition 52 of timber licence, termination of licence.
11. Licensing Officer appointed under section 37(2), Trust Land Act, Cap. 288.
12. The Trust Land (North Yatta, Yatta Plateau and Ithanga) Rules, section 8(g).
13. Section 8(g) of the Trust Land (North Yatta, Yatta Plateau and Ithanga) Rules, L.N. 181/1959.
14. Someone did actually dig out a stamp mark and fixed it on another log. He escaped liability under section 22 of Kenya Forest Ordinance 1911 - because the accused could not have counterfeited, altered, obliterated or defaced the mark. Gordon, W.A., (1955). The Law of Forestry, op.cit. p.372.
15. Measurement on standing volume being done for pulp and paper mill.

16. Section 4(3), The Forests (General) Rules. 1m^3 of stacked wood is approximately equal to 0.56m^3 of solid wood. Forest Department General Order no. 206, Measurement of Timber.
17. With axes and without, four and two shillings per month respectively, second schedule, item 16. of the Forests (General) Rules, 1969.
18. It happened in Elburgon on measurement of Sokoro Sawmills logs, 1977. Writer's personal experience.
19. Section 10 of the Forests (General) Rules, 1969.
20. Section 4(1)(ii) of the Forests (General) Rules.
21. Kayemba v. R. 1953, 20 E.A.C.A. 158.
22. The royalty per unit volume increases on a graduated scale with increase of size of logs. Broadly, the grades are based on the pruned and unpruned logs. Pruned logs have branch scars completely occluded and are more expensive than the unpruned logs which are generally charged at a price of one class.
23. Government Land Act, Cap. 280, section 33. First schedule r.2.
24. A rational tree valuation besides considering the market value of its wood should consider species, aesthetic function, scarcity, site and any other unique characteristic of such trees especially when ornamental issue is at stake. Raad, A. (September, 1976). Trees in Towns and their valuation.
25. Pulp and Paper Mill gets considerably reduced royalty.
26. Legal Notice 190/1965.
27. Section 6 of the Forests (Workmen's Residence) Rules, 1965.
28. Forest workman means any non-pensionable employee of the Forest Department but does not include a casual labourer and un-established subordinate service.
29. The Forests (West Prokot) Rules allows Suk tribe to live in forest areas. Section 6(b). Similarly the Forests (Tugen-Kamasia) Rules, section 5. and 7. implies on possibility of allowing approved forest cultivators to live in the forest areas.
30. The Forests (Meru) Rules, Section 3(e) and the Forests (Tugen-Kamasia) Rules, section 5(i).
31. Condition 43 of licence to extract and mill timber.
32. Section 72, 73 of the Government Land Act, Cap. 280.

33. Section 80 of the Government Land Act, Cap. 280.
34. Section 130 of Government Land Act, Cap. 280. Building also forbidden by section 8, Forest Act, Cap. 385. Any building is a prima facie evidence of occupation at least for some time.
35. Wanyoike v. Beverly (1965) E.A. 514. Claim of ownership by prescription disallowed and bulldozing of huts was justified.
36. Private land in this context includes Government Land which is leased to any person or a body.
37. Transfer, transmission, disposition used to have meaning as assigned in Registered Land Act, Cap. 300.
38. Gordon, W.A. (1959). Some theoretical influences of legislation on British Woodland Management.
39. Estate Duty Act, Cap. 483, section 36.
40. Section 39 of the Estate Duty Act.
41. The section is highly influenced by the U.K. Settled Land Act, 1925 which makes one quarter to three-quarters rule on income to capital respectively. Gordon, W.A. (1965). Sustained yield and the Law.
42. Fernand v. Wilson (1845) 15 L.J.Ch. 41.
43. Honeywood v. Honeywood (1874) 18Eq. 306.
44. Timber means generally oak, elm, and ash. Meaning of timber differs in different localities in U.K. Gordon, W.A. (1955). The law of Forestry op.cit. p. 102-3. In Kenya Forest Act, timber simply means any tree which has effectively been severed from the soil and part thereof and also any of its product however fashioned. The word tree does include both timber tree and other woody plants at any stage of development. Section 163, Registered Land Act concedes ultimate application of common law to Kenya Land Law in the absence of any other written law.
45. Registered Land Act, Cap. 300, section 100.
46. The Forests (Tugen-Kamasia) Rules specifically allows african of Baringo District to herd goats in the watering routes in the forest areas.
47. The Forests (Meru) Rules. First schedule outlines stock routes in great details.
48. Mellows, A.R. (Nov. 1964). Preservation and felling of trees. p.65.

CHAPTER SIXROLE OF FOREST OFFICERS¹DEPARTMENTAL ORGANIZATION AND FUNCTION

The Forest Act, Cap. 385, which mainly governs the activities of the Forest Department does not create the Department as such. In fact the Department is the product of various recommendations made by forest experts during the colonial period.² One of the major recommendation that has had far reaching consequences is the extensive planting programme. Besides the biological and utilization considerations, the projected planting programme³ to meet the country's requirements of timber has inevitably meant increased work for the forest staff. There has therefore been a corresponding increase of staff to match with the work of establishment, maintenance and marketing of the resultant forest produce as well as the produce from the existing indigenous forests. The desired planting programme has meant increase of the professional cadre to guide the work and the inevitable opening up of new forest stations,⁴ the lowest administrative unit in the hierarchy of the Forest Department. Each extra station means extra labour and this is achieved through the normal Government machinery of requesting extra staff where work justifies, funds permitting. The country is divided for forestry purposes into Conservancies, Divisions and Districts. The territorial organization of the Department is based firstly on the amount of work and secondly on geographical distance.

(2) To date, the Department is manned at the top by professionally qualified staff⁵ and lower down by officers who are technically qualified either by training or through experience.⁶ The actual manual work is done by subordinate employees. All the Forest Department employees are part of the

civil service and governed by the same code of regulations as civil servants in other Departments. Forest Officers have no power of appointment, promotion and retirement of staff. For senior officers, the power is vested in the Public Service Commission which does delegate powers of appointment, promotion and retirement to authorised officers⁷ in the case of junior officers.⁸ Such delegation does not prevent the Commission from exercising such powers in respect of the junior officers.⁹ Although forest officers have no statutory powers of appointment, promotion and retirement of Department staff, their role is a big one as they are the ones who make recommendations on the necessity of appointment or other staff management matters. It is the duty of forest officers to make an annual assessment, each officer reporting on his junior officer. It is on such assessment, theoretically that promotion of officers should be made. In practice, length of service, merit and ability, and age of officers are criteria for promotion with the length of service being given more weight in contrast with Public Service Commission Regulations, section 13(1), which stipulate that proved merit and suitability for the vacancy will be given greater weight than seniority. It is also the duty of the Forest Department officers to implement various Government directives mainly in form of circulars and to manage staff through consultation with the object of sustaining morale, motivation and productivity.

(3) The Forest Act does not confer on Chief Conservator statutory power, apart from that of issuing licences to do various activities in forest areas and on unalienated Government land.¹⁰ The power of the Chief Conservator to do various activities in the forest areas stems from the Minister who is responsible for all the activities of the department

to Parliament and the public. The Act gives the Minister various wide powers of doing many functions in forest areas. Even though in practice, the Minister does not delegate his powers to the Chief Conservator formally there is a doctrine of implied authorization flowing from the Minister to the Chief Conservator and his team of staff. The public is not aware of the definition of the powers forest officers have and, in practice, they assume the forest officers have the powers they purport to possess. Unless officers do things which are contrary to the Forest Act, the Minister is in accordance with the doctrine of ministerial responsibility, accountable for their activities, even though he may not be conversant with the detail. The various activities in forest areas are carried out on power of licence, but since the land is not vested in the Minister, any disposition of land such as lease would be ultra vires if purported to be done by the forest department officers. The Department therefore has custodial functions of the forest areas. As soon as the land is legally relinquished pursuant to section 4, of the Forest Act, it automatically reverts to the Commissioner of Lands. For all other forests in private land and Trust land, the function of the Department is purely advisory through the arm of forest officers posted to promote forests on areas outside gazetted forest areas.¹¹ These forest officers have no statutory powers on the areas of which they are in charge.

(4) Currently, there is no statutory provision for an advisory board to advise the Minister. The function of advising the Minister is done by the Department through the ministerial machinery. The Minister is not obliged to take such advice. As a politician, the Minister has to weigh political considerations against Departmental advice which is usually based on policy and technicality. The Department is bound to comply with the Minister's decision. If the Authorised Officer disagrees with such decision, the only remedy for him is to record such disagreement and then comply with the decision.

(5)(a) Another incidental function of the Department is to process trade disputes in accordance with the Trade Dispute Act. The team of staff through which the Chief Conservator does various management activities can conveniently be divided between management and labour. Except casual labourers, they are all civil servants and entitled to join Union of Kenya Civil Servants.¹² There are various levels of dealing with industrial disputes, the lowest being at the forest station. While a forest officer will hand over the matter he cannot solve to the immediate boss, the shop steward can bypass normal channels and take the issue to the highest level and he will have a hearing. The practical implication of this ability of the Union to bypass the chain of command is that even the most unwilling officer is bound to meet and confer with union representatives on a number of issues, if he does not want to lead a hostile labour force.

(b) Since the employees are all civil servants, salary increases are not major issues of collective bargaining because they cannot be discussed in isolation by any one department. Disputes however do crop up when some employees think they ought to be on a different salary scale, commensurate with the job they do. The main industrial disputes are in relation with working conditions, task work, different forms of victimization by forest officers and the general welfare of the employees such as adequate housing and provision of protective clothing. Generally, funds permitting, forest officers have wide discretionary measures they can take to satisfy union demands. The act of collective bargaining is very much influenced by the personal characteristics of the trade union representatives and the forest officer. To a forest officer some trade union representatives are chronic complainers and nuisance to proper management of labour and deserve severe punishment at the earliest opportunity. To the trade union representative,

some officers are stumbling blocks to the welfare of the workers. Some trade unionists also nurse hopes of political power and resent opposition to these aims. The union leaders therefore become bent on exposing all the weakness of the particular officer besides making other employees unco-operative. The option left to an officer is to concede that the union is here to stay and negotiate or fight out the battle. Officers with many weak points likely to damage him if exposed, in practice are likely to yield to the point which is on the whole detrimental to good forestry. Even an officer with an unblemished record is likely to yield to some extent before he can get a reasonable production and in any case to avoid any blackmail.

(c) In practice, forest officers hold regular meetings with the union and in these meetings differences are solved and for those which cannot be settled they are referred to higher level of industrial relation to be reconciled. It is rare for a dispute to reach the Industrial Court for arbitration. The machinery however exists and collective bargaining on the whole is governed by the Trade Dispute Act, Cap. 234. Before taking any drastic action such as a strike or slow down, the machinery must be exhausted as laid down in the Trade Disputes Act,¹³ which also binds Government as far as the government employees are concerned. Officers also help in collection of union dues.¹⁴

2. REVENUE AND EXPENDITURE

Forest Officers are also entrusted with the role of collection of revenue which is resultant from sale of forest produce. Below the Minister is the Accounting Officer, so designated by the Treasury. He delegates his powers of revenue collection to the Chief Conservator. The Chief Conservator in writing, for each financial year, delegates the power among his officers, down to the level of forest officers running

forest stations. Each officer must acknowledge in writing the duty of revenue collection. Besides the revenue collection, the forest officers are permitted by a form of Authority to Incur Expenditure to spend the money which is yearly approved by the Parliament. The officers as a matter of duty have to account for the money thus spent and collected to the satisfaction of Controller and Auditor General. Officers are also obliged to submit their individual requirements in the form of yearly estimates. The estimate is submitted to the Treasury for scrutiny and pruning to the level the government can afford, taking into account the overall ministerial requirements in the country. There are financial instructions to guide forest officers in course of duty.

3. QUALITY CONTROL OF TIMBER

(1) The Timber Act, Cap. 386 empowers the Chief Conservator to control timber quality regardless of ownership status especially when it is meant for export. Timber¹⁵ in the Act does not include wood carving, a product made from valuable wood and mainly for export market or at least for sale to tourists. Pursuant to the powers conferred by the Act, the Chief Conservator may authorise any person to be a grader.¹⁶ In practice, before such authorization, one of the forest officers coaches and eventually tests candidates on grading of timber. It is the successful candidates that the Chief Conservator authorizes to be graders. If the grader afterwards proves incompetent in his statutory duties of grading, the Chief Conservator may suspend or revoke his authorization in respect of such grader.¹⁷ The grader if dissatisfied with the decision of the Chief Conservator may appeal to the Minister within thirty days.¹⁸

(2) The grader thus appointed has powers under the Act to refuse to grade any timber he thinks is not properly presented.¹⁹ and may request the owner of such timber to arrange it in a way it can be inspected, piece by

ee. For any dispute that might arise between the grader and the timber merchant, the latter can appeal to the Minister if unhappy with the decision of the Chief Conservator. The appeal may reach the Minister only if the Chief Conservator confirms the decision of the grader. The decision of the Minister is final.²⁰ In practice, this dispute in connection with grading rarely occurs because there is a great cooperation and in any case the graders are employees either of the timber merchants or of the owners of the timber to be graded.

3) On the part of the timber merchant, he is prohibited by the Act to use any prescribed mark²¹ used by a grader unless the timber is hence graded accordingly. He may also not tamper with any special mark made by grader. When timber is offered for sale, it is an offence to use a term that could be confused with any term implying a grade of timber, when actually the timber being marketed is not graded.²² It means that if an owner does not claim his timber to be of any grade, he can sell it locally. Anyway there is no restriction on moisture content or the prices in any market. It is mandatory to grade any timber going for the export market. For such timber export, permit and grading certificate are prerequisite. If in the course of handling, the condition of timber significantly changes from the original condition when grading was done, the Chief Conservator may cancel the export permit.

(4) The Chief Conservator, in the name of the Minister, may exempt any timber from some or all the provisions of the Act. He may also make rules in regard to export permits; places of export; prescription of grades of timber; and the appointment of inspectors to see that timber is being handled in accordance with the provisions of the Timber Act.²³

(5) In practice, if the timber is cut to the sizes it purports to be, and is of desired moisture content, grading is based on the strength and the appearance of timber. On the whole, grading on strength is given more weight than appearance grading. Theoretically, the better grades of timber should fetch more money but no price control on various grades of timber.

4. POLICING

(1) Besides the active management of forest areas, the forest officers as custodian of forests have a major role of policing all the forest areas in the country. Essentially they are supposed to prevent and detect offences²⁴ in the forest areas. The offences are in relation to forest produce, in forest areas or in transit. There are also offences against forest areas without immediate proof of damage. Earlier forest legislation contained provisions on trespass²⁵ but recent legislation has dropped the word "trespass" because if applied strictly, the use of forest areas for recreation and other uses would be unnecessarily jeopardized. Activities such as illegal occupation of forest areas and grazing are specifically forbidden rather than using the term trespass which has wide legal meaning.

(2) There is no investigation unit as such in the forest department organization. Most of the police duties are done through the arm of Forest Guards and the forest guards assistants commonly known as patrolmen. The forest guards are uniformed and were initially engaged on military terms. They are now ordinary civil servants and except in some remote parts of the country, they are usually not armed. Besides other technical duties as reporting diseases and fire hazard situations, the forest guards are each given a beat which he is supposed to supervise constantly to see that there are no illegal activities taking place. The Forest Act today recognises a

forest guard as a forest officer and therefore he has all powers conferred on forest officers by the Forest Act. Section 9(d) makes it an offence for anyone to impersonate a forest guard. The forest guards usually report any illegal activity either to their Foresters who are their immediate supervisors or to the Police Officer near the scene of an offence.

(3) Section 11. of the Forest Act empowers forest officers, among other officers such as Police, Magistrates and Game Wardens, to do police duties in forest areas. A forest officer may demand authority from anyone doing any activity in forest areas and on unalienated government land if such activity requires to be licensed under the Act. The officer can also ask anyone to prove ownership of any forest produce in his possession. The section further empowers forest officers to arrest and search any person on suspicion of a forest offence. The officer has power to seize and detain any forest produce together with tools used in the commission of offence. In the case of forest guards and other officers not being employed by forest department, they are supposed to hand over the matter to the nearest magistrate or a forest officer with powers to compound offences.²⁶ Where a person may abscond the officers have power to detain such person instead of relying on the personal details which may be false or where a person is suspected of not likely to honour his promise to attend court.²⁷

(4) The police powers which forest officers have do not extend to court prosecution. The forest officers subject to the provisions of section 10 of Forest Act rely on police who are empowered to prosecute any suspected offender, on behalf of the Public Prosecutor.²⁸ The duty of the forest officer here is to supply the relevant evidence to sustain prosecution and naturally he may be called as a witness to corroborate any fact in connection with the

proceedings. Section 13 of Forest Act stipulates that in any proceedings the forest produce is assumed to be obtained from forest areas and the onus of proof of ownership is on the person in possession of such forest produce.

(5) Related to the court prosecution is the power of forest officers to compound offences. This is not technically a judicial function because the settlement is voluntary both on the suspected offender and the officer compounding the offence. Section 10 of the Forest Act stipulates that any forest officer who has been gazetted by a Minister may with the consent of the Chief Conservator accept a sum of money by way of compensation from anyone who has committed a forest offence together with the forest produce if any. The compensation is limited to a maximum of five times the value of the estimated damage and if the estimated damage cannot be valued accurately, the compensation should not exceed two hundred shillings for each offence. On this basis, the gazetted forest officers, regardless of their rank²⁹ ask for compensation for a variety of offences committed in forest areas. Theoretically if the damage can be estimated accurately, the fine can exceed two hundred shillings depending on the damage caused. In practice, the fines are fairly small, much lower than two hundred shillings. Forest Officers usually take into account the ability of people to pay the compensation, for if people suspected or having committed an offence fail to pay the compensation it would mean starting a time-consuming legal process and the provisions of compounding offences was made precisely to minimize litigation. The offenders are usually forest employees and their dependants and adjacent farmers. The offences are usually of minor category such as grazing in forest plantation and other offences related to use and occupation of

forest areas.

Settlement by this process of compounding bars further legal proceedings. If one refuses the verdict of forest officer, the forest officer compounding is logically bound to forward the case to court for prosecution. Compounding of offences is a popular exercise as can be seen from table 6. The number of cases prosecuted in the court is relatively small. See table 7.

(6) On the whole policing is meant to prevent and detect theft of forest produce. Depending on the gravity of the offence, the offenders may be dealt with by compounding process or they may be taken to court for trial. The Forest Act does not define what constitutes stealing. "A person who fraudulently and without claim of right takes³⁰ anything capable of being stolen or fraudulently converts to the use of any person, other than the general or the special owner thereof, any property, is said to steal that thing or property." (Penal Code section 268(1)).

Analysis of the above definition would reveal the circumstances under which forest produce would be considered stolen. As for what can be stolen, any inanimate thing which is a property of any person is capable of being stolen when it is movable or is made movable in order to steal it. Also any animal which is under control of any person can be stolen.³¹ A tree though biologically living falls under the category of inanimate property. When a tree is severed it becomes movable and hence capable of being stolen but not until it is felled. "Fraudulently converts" connotes an intention of a person taking a thing to convert it in such way that it cannot go back to the owner in the original state in which it was taken. Someone who takes logs from forest area may saw them into sawn timber. The

NATURE OF OFFENCE		1974	1975	1976	1977	1978
1. DAMAGE TO TREES	NO. OF CASES	212	188	308	365	195
	TOTAL COMPENSATION	5,786.00	6,640.00	14,100.00	24,774.00	7,616.00
	AVERAGE SHS.	27.00	35.00	45.00	68.00	39.00
2. ILLEGAL REMOVAL OF FOREST PRODUCE	NO. OF CASES	339	401	304	422	401
	TOTAL COMPENSATION	13,943.00	15,385.00	17,221.50	26,738.00	16,165.50
	AVERAGE SHS.	41.00	38.00	56.00	63.00	40.00
3. ILLEGAL GRAZING	NO. OF CASES	294	405	459	547	567
	TOTAL COMPENSATION	8,545.00	10,180.00	17,048.00	23,990.00	28,354.00
	AVERAGE SHS.	29.00	25.00	37.00	43.00	50.00
4. CUTTING FOREST PRODUCE ILLEGALLY	NO. OF CASES	124	100	47	101	149
	TOTAL COMPENSATION	3,156.00	2,910.00	1,639.00	4,553.00	7,718.00
	AVERAGE SHS.	25.00	29.00	34.00	45.00	51.00
5. ILLEGAL CULTIVATION	NO. OF CASES	116	143	94	152	53
	TOTAL COMPENSATION	2,155.00	2,765.00	4,650.00	8,760.00	4,793.00
	AVERAGE SHS.	13.00	19.00	49.00	57.00	90.00

6. BURNING OF CHARCOAL WITHOUT LICENCE	NO. OF CASES	24	27	11	28	1978
	TOTAL COMPENSATION	730.00	860.00	490.00	1,560.00	26
	AVERAGE SHS.	30.00	31.00	44.00	55.00	1,620.00
7. ILLEGAL BURNING	NO. OF CASES	87	302	117	97	83
	TOTAL COMPENSATION	6,720.00	17,120.00	9,315.00	8,280.00	14,896.00
	AVERAGE SHS.	77.00	56.00	79.00	85.00	179.00
8. DAMAGE TO WET ROADS	NO. OF CASES	-	-	-	-	2
	TOTAL COMPENSATION	-	-	-	-	60.00
	AVERAGE SHS.	-	-	-	-	30.00
9. COLLECTING HONEY WITHOUT LICENCE	NO. OF CASES	4	5	3	2	-
	TOTAL COMPENSATION	30.00	125.00	75.00	40.00	-
	AVERAGE SHS.	20.00	25.00	25.00	20.00	-
10. FOUND IN FOREST ILLEGALLY BEYOND 9 P.M.	NO. OF CASES	3	-	3	3	-
	TOTAL COMPENSATION	150.00	-	60.00	105.00	-
	AVERAGE SHS.	50.00	-	20.00	35.00	-
11. STAYING IN FOREST	NO. OF CASES	3	3	-	7	4
	TOTAL COMPENSATION	150.00	90.00	-	525.00	355.00
	AVERAGE SHS.	50.00	30.00	-	89.00	89.00

NATURE OF OFFENCE	1974	1975	1976	1977	1978
12. ENCROACHMENT OF FOREST AREA	NO. OF CASES	1	-	1	-
	TOTAL COMPENSATION	50.00	-	50.00	-
	AVERAGE SHS.	50.00	-	50.00	-
13. NEGLECT OF SHAMBA	NO. OF CASES	12	-	-	-
	TOTAL COMPENSATION	600.00	-	-	-
	AVERAGE SHS.	50.00	-	-	-
14. USING ROAD WHILE CLOSED	NO. OF CASES	-	1	2	-
	TOTAL COMPENSATION	-	50.00	100.00	-
	AVERAGE SHS.	-	50.00	50.00	-
15. ILLEGAL BUILDING	NO. OF CASES	2	-	-	-
	TOTAL COMPENSATION	100.00	-	-	-
	AVERAGE SHS.	50.00	-	-	-
GRAND TOTAL	NO. OF CASES	1,209	1,347	1,727	1,480
	TOTAL COMPENSATION	41,565.00	64,648.00	99,575.00	81,578.00
	AVERAGE SHS.	34.00	48.00	57.00	55.00

TABLE 7 CASES PROSECUTED IN COURT

	1974	1975	1976	1977	TOTAL
NUMBER OF PROSECUTIONS	920	926	546	435	2,827
VALUE OF FINES	85,737.00	48,038.00	62,630.90	48,201.25	244,607.15
TOTAL NO. OF MONTHS SENTENCES AWARDED	164½	166½	219	63	613
VALUE OF COMPENSATION	73,568.00	490.00	11,572.50	17,835.75	103,466.25

law provides that such goods can still be recovered if they can be identified no matter to what extent they are converted as for example in case of furniture and fence posts, or charcoal.³² Fraud is an essential element if taking is to be considered as stealing. When one sincerely claims a right of ownership, however unfounded such claim may be, one cannot be deemed to steal. Fraud is inconsistent with a claim of right made in good faith for an act complained of. In this respect, a farmer who fells trees in a forest area adjacent to his farm and who in good faith believes the trees are on his land, cannot legally be guilty of theft. Here ignorance of the law significantly influences the subsequent legal process in favour of the person who has done the act being complained of.

(7) Traditionally many people still regard trees in the wild as nobody's property and hence believe that they are entitled to take such forest produce free and that the activities of forest officers in protecting forest produce like any other property are unjustified. Examining the sections in the Penal Code that deal with theft of property, trees do not seem to have been in the minds of the legislature.³³ That the natural forests were not considered as anybody's property is evident from section 334(c) of Penal Code which prescribes a punishment for anyone damaging trees only when they are under cultivation. The major problem of effective policing is the shortage of staff especially in the forest guard cadre. The fact that forest areas are scattered and hence have longer boundaries to police makes policing even more complex.

(8) Forest Officers also have wide powers of policing under the Wildlife (Conservation and Management) Act. Section 49 empowers any authorised officer³⁴ to detain any person found doing any act for which a licence is

required under the Act. If an officer suspects that a person may not appear in response to summons, he can arrest him without a warrant. An authorised officer is also empowered to inspect any trophy,³⁵ licence and any item used in connection with hunting. He can seize and detain any item for which he suspects an offence has been committed. To facilitate this police duty, a senior officer³⁶ is empowered to erect a temporary barrier across any road and anyone approaching such barrier is bound to comply with the search instructions. The section is meant to minimize illegal hunting and poaching in general. In practice the duties of search and arrest are carried on by the Game Department employees and the police who have been very active in preventing and detecting poaching crimes especially in respect to elephant tusks and any other valuable trophy.

(9) In sharp contrast with the Forest Act,³⁷ the Wildlife (Conservation and Management) Act has provision for any warden to prosecute for any offence against the Act.³⁸ Subject to the directions of the Attorney General, a warden has all the powers conferred by the Criminal Procedure Code, Cap. 75. The Trout Act, Cap. 380 which technically should come under the Wildlife (Conservation and Management) Act, gives forest officers³⁹ power to interrogate anyone found fishing trout to produce a licence. The same powers of search and arrest of any suspected person together with tools used in connection with the offence of unlicensed fishing can be impounded.⁴⁰

(10) The main similarity in the policing of wildlife and trees is that since wild animals and trees do not seem to be under the direct control of anyone, they are all regarded as natural gifts. As the forests make habitat for these animals, forest officers' powers to police them mainly from this point of view of integrated use of forest resources seem to be most logical. They are all in any case renewable wild resources.

(11)(a) Besides preventing and detecting crimes by the public,⁴¹ forest officers have a duty to see that the Forest Department employees themselves do not get involved in criminal misappropriation. The officers therefore carry periodical checks on revenue collected by the officers lower in rank as well as to see that various projects are properly completed. There is an obligation of forest officers to see that the money earmarked for various jobs such as salaries and other item of expenditure is properly spent.

(b) In practice what happens is that when an officer collects revenue from sale of forest produce, he may spend some of it hoping to return it at a later date. The amount taken out of the safe may become fairly large and may subsequently be discovered before he refunds the money.⁴² Such money shortage may be discovered by the immediate superior either in the course of his usual check or acting on information. Such shortage can also however be discovered by the Government Auditors in the course of their periodic checks. The shortage can also be discovered by police usually when informed either by a forest officer or by employees junior to the officer who is suspected of having committed the crime. There is also policing on the government employees to minimize mischief associated with other government property. The provision of the Forest Act, section 9 which makes licence, and any other document lawfully issued, sacrosanct is an effort to minimize fraud mainly by employees who can freely issue them without the necessary authority, or tamper with the accounts.

Before an officer takes over a new station, there is a procedure of taking over and all the accountable items are systematically checked and if a loss or fraud is discovered, the outgoing officer is asked to account for such discrepancy if any. It is a standing instruction and a forest officer

is generally duty-bound to ensure that the procedure is followed by officers junior to him. Fear that theft or genuine losses will be discovered before an officer leaves a station helps to prevent misdemeanour.

5. DISCIPLINARY PROCEEDINGS

(1) It is an important role of forest officers to ensure that there is no serious breach of discipline among the employees of the Forest Department. It is their duty to initiate disciplinary proceedings against any officer who breaches discipline. The punishment available for breach of discipline, depending on the seriousness of the matter, is dismissal, demotion, withholding of salary or increment, reprimand and surcharge either of a token amount of money or to cover the whole cost of the item associated with the breach.⁴³ Disciplinary power to inflict any of the mentioned punishments is vested in Public Service Commission. For junior officers, the Public Service Commission has delegated some of its power to the authorised officer.

(2) In administering the various punishments there is a disciplinary procedure which must be followed and any noncompliance with the procedure may invalidate the decision taken. In all cases regardless of the seniority of an officer, the suspect must be informed of the reasons the disciplinary action is being contemplated. He is given a chance of a hearing and it is up to him to exculpate himself. Where it is the feeling of the authorised officer that the accused cannot express himself well, especially in the case of junior officers, the authorized officer has discretion to allow such accused officer to be represented by another public officer.⁴⁴ The right of being heard is usually offered during the reading of a charge sheet where the accused is supposed to exculpate himself within a short time. The disciplinary procedure

for the senior officer⁴⁵ has more safeguards against injustice. The Public Service Regulations stipulate that in case of misconduct which if proved would justify dismissal, the officer initiating disciplinary proceedings shall consult the Attorney-General on the framing of the charge and the accused has a duty to exonerate himself on the charge sheet and eventually to a committee set up to investigate him.⁴⁶ Neither the head of Department nor the authorized officer is a member of such committee which is supposed to inquire without bias. The committee sends its findings to the Commission with judgement but leaves sentence to be decided by the Commission on all the relevant facts of the committee's findings. Appeal to the Commission is allowed within six weeks. For a junior officer, the procedure leading to dismissal is less complex. The decision to dismiss him can be taken by the authorized officer. The accused officer is however given a right of hearing.

(3) For some other disciplinary action, other than dismissal, the decision may be taken by the authorised officer after studying the representation by the accused officer. In some cases, reprimand in form of severe warning is given to an officer after the alleged misconduct. An officer thus warned may refuse such warning if he purports to be innocent and a further investigation may then be carried out or simply his denial may be accepted. Usually warnings have a cumulative effect and they indicate whether the officer is a habitual offender or he has simply lapsed temporarily into crime. A future disciplinary action will consider whether one has had warnings and generally for some offence, different officers might be awarded punishment of different severity depending on their past record.

(4) Besides the disciplinary proceedings initiated departmentally, an officer may have criminal proceedings in court, initiated usually by Police for various criminal offences. If the crime is not serious, the authorised officer may interdict such an officer and if it appears serious, the accused

officer is suspended.⁴⁷ If during the trial, the officer is acquitted, his full status is reinstated and he cannot be punished again even by the Department for the same alleged offence.⁴⁸ If an officer on the other hand is convicted, the Commission is given all the facts of court proceedings and then decides the punishment it will award besides the sentence awarded to the officer by court. The commission reserves its punishment decision until after the appeal. For criminal offences, an officer is usually dismissed. For junior officers, the authorised officer makes the decision on the punishment to award to the convicted officer. Minor offences such as those under the Traffic Act and by-laws do not warrant the Department to inflict additional punishment on the convicted officer. It is the offence triable under the Penal Code and other Acts which are of concern especially where one may be imprisoned without the option of a fine.⁴⁹ The Penal Code takes a more serious view when for example stealing is done by government employees who comes across the stolen property by virtue of his employment.⁵⁰

(5) In practice even the junior officers are aware that there is a disciplinary procedure laid down that must be followed before a disciplinary action is taken. An officer, apprehensive of the safeguards and possibility of acquittal usually on benefit of doubt is bound to consider it very carefully before initiating disciplinary proceedings. As the forest officers do not have powers of punishing anyone, the easiest method of punishment is to post an officer from his duty station to another one. The fear of such disturbance or being posted to a remote disagreeable station is meant to deter an officer from misconduct. The unfortunate consequence of such movement is that abiding officer is unduly affected. Usually such postings is done with the excuse that it is in the interest of work. An officer may also be punished by being put under close supervision of another officer where he is divested of all of his power or most of it. In case of gross inefficiency, compulsory retirement can be initiated by the forest officer, senior to such an officer. The aim

of the punishment is to deter crimes and other forms of misconduct as well as teaching a lesson to other officers, especially those with inclination to commit similar offences. Hopefully punishment can also reform the offender.

In practice, where disciplinary proceedings are abortive or discontinued at an advanced stage due to lack of adequate evidence, the accused officer is subsequently treated with suspicion and it is not uncommon to punish such an officer by other indirect methods such as posting to another station. The same case applies to an officer who is acquitted by a court.

6. PUNISHMENT AND ORDERS

(1) As for the various offences against the Forest Act, the Act makes a general penalty on pro rata basis. Section 14 of the Forest Act stipulates that anyone who breaches any of the provisions under the Act is guilty of an offence punishable by a maximum fine of three thousand shillings or to imprisonment of a term of not exceeding six months.⁵¹ The various provisions of the Act therefore do not have specific punishment and it is up to the court to determine the degree of criminality. It is for example an offence to graze cattle in the forest without a licence. The law does not distinguish the difference of whether the animals being grazed are goats or sheep or indeed whether grazing is on plantation or on open glade where damage would be very little. Besides the punishment stipulated the section also stipulates that one is liable to forfeit any forest licence issued in respect of which the offence is committed.

The section also stipulates that the court may in addition order the person convicted to pay the Chief Conservator the equivalent of the value of the forest produce which has been damaged or removed. Where an offence is in connection with occupation of government land, any property not removed by

the time the court has ordered, become government property to be disposed as the Chief Conservator likes. The Act has no provision for forfeiture offences. Restitution of property is however in practice implemented when practical.

(2) There is also a provision for the court to award a maximum of half of the fine imposed to anyone who may have supplied the information which leads to conviction. Section 12. of the Forest Act further stipulates that the government employees are not eligible for this reward. In practice this is not paid because in any case, most of the court proceedings are started on information provided by government employees as a matter of duty.

(3) There is a general penalty for breach of any of the provisions of Timber Act, Cap. 386. Section 12 of the Act stipulates a maximum fine of six thousand shillings or imprisonment of six months. The Minister in this respect may make rules on the penalty for a breach of any condition of the Act but he cannot make rules with severer penalty than those stipulated in section 12. of the Timber Act.⁵²

(4) Unlike the Forest Act which stipulates one general punishment and court orders for various offences, the Wildlife (Conservation and Management) Act has a wide variety of penalties for various offences against the Act. The penalties are also generally severer and the severity depends on the type of offence. There are also specific offences for which besides fine and imprisonment, the items used in connection with commission of an offence are forfeited.⁵³ Like the Forest Act, in all cases of conviction, the licence for the activity in question if any is automatically forfeited. Most of the offences against the Act are illegal hunting and unlawful possession of a government trophy.⁵⁴

7. DEPARTMENTAL REPRESENTATION IN OTHER BODIES

(1) The Forest Officers are also Departmental representative in the country especially on the issues that affect forest management. Usually depending on the personality of a local forest officer, the influence of the Forest Department can be far reaching as far as the overall development of the country is concerned. In many cases, there is no statutory requirement that a forest officer be a member of any committees or boards in the countryside even where the interest of forests would be at issue. In fact it is only the Agriculture Act and the Water Act which have some provisions for including senior forest officers in some of the bodies created under the authority of the respective Acts. Section 22(2)(e) of the Agriculture Act, Cap. 318 stipulates that the senior forest officer in District shall be a member of the District Agriculture Board and as a matter of practice, this is implemented. Similarly, the senior forest officer in a province is by statute a member of the Provincial Agricultural Board.⁵⁵ Most agricultural activities are administered by these boards and an effective forest officer should be able to express views particularly on forest conservation. It is a duty that the forest officers concerned should attend meetings of these boards without fail.

(2) The Water Act, Cap. 372 theoretically divides the country into six water catchment areas,⁵⁶ and for each water catchment, there is one forest officer as one of the members of the board created under section 23 of the Water Act. The duty of each catchment board is to advise the Water Apportionment Board on the use of existing and potential water supply. The board also advises on adjustment of licences issued for the exploitation of water in their area of jurisdiction. Section 24 of the Act also creates a Regional Water Committee with a stipulation that one of the members shall be a forest officer nominated by the Chief Conservator. The main duty of the committee

is to advise the Minister on conservation,⁵⁷ development and use of water. The committee has other administrative duties such as nomination of members to serve on the Water Resources Authority which is the supreme body created under section 19 of the Act. The Chief Conservator is a member of the Water Resources Authority.⁵⁸ At least, in practice the Regional Water Committee and the Catchment Boards are not active and the only active body is the Water Apportionment Board created under section 25 of the Act. The Water Apportionment Board, which does not have a forest officer as a member unlike the other water boards has to sanction any use of water in the country. A permit is not required essentially only when any "works"⁵⁹ are undertaken not for, utilization of water.⁶⁰ Drawing water from any body of water using a hand utensil or allowing animals to drink directly from such body of water does not require a permit from the Water Apportionment Board.

(3) In practice there are forest officers in most of the districts and they should attend various district development committees when invited by the administration where there is no statutory requirement. In these meetings forest officers give valuable advice on the interest of forests especially on private land and also on the Trust land forests in some cases. In passing, it is noteworthy that trees are as a matter of practice harvested before transfer of land pursuant to Land Control Act, and unnecessary harvesting of trees prior to or after sale of land could best be prevented by proper representation of the department in Land Control Boards. Forest Officers are not members of Land Control Boards. It is a weakness in a forest officer to be uncooperative with the various levels of administrative hierarchy, for meaningful results can only be achieved through cooperation. Cooperation with other officers is so necessary that it is one of the factors which is usually considered during the annual assessment of an officer.

(4) . It is a ministerial policy that the forest officers should not communicate with the press and other media of communication without express authorization. For less controversial issues and where it is a matter of professional promotion of forestry, forest officers have occasionally advanced the cause of forestry. Staff strength permitting, there was an officer designated for public relations work. Such public relation officers have now had to be withdrawn for more pressing forestry work. Each officer regardless of the job speciality is expected to promote forestry in schools and other public gathering.

FOOTNOTES

1. The Chapter touches on administrative law, criminal law and evidence. In course of analysis of the role of forest officers, the writer has been influenced by the following authors:-
Foulkes, D. (196) - Introduction to administrative law;
Brown, D.C. (1965) - Criminal procedure in Uganda and Kenya;
Morris, H.F. (1968)- Evidence in East Africa;
Hart, H.L.A. (1961)- Punishment and responsibility.
Essays in philosophy of law.
2. Mr. Hutchins in 1902 recommended establishment of more forest stations and irrigated nurseries. In 1922, Troup from Oxford recommended expansion of the Department.
3. First formal decision to plant 2,400 hectares per annum made after second world war pursuant to a recommendation by Forestry sub-committee on development.
4. Forest station is manned by a forest officer, his assistant, forest guards and labour force depending on the approved strength.
5. Professionally qualified people normally have to have Bsc. Forestry and in this category, the Department has 1 Chief Conservator, 2 Assistants, 9 Conservators in charge of various specialities and below each Conservator, two to eight Assistant Conservators of either grade one or two.
6. The officers who are technically qualified have diploma in forestry or some other certificate recognized by the Government. In this categories are foresters with a range of four grades. Below the foresters are one to two forest assistants in each forest station, a number of forest guards and the subordinate staff. Besides the people actively engaged in forestry management, there are supportive staff in the category of Executive Officers, Accountants, Clerks, Secretaries, Typists and Drivers.
7. "Authorized Officer" means an officer appointed by the President and is in charge of one or more departments. In the case of the Forest Department, he is the Permanent Secretary.
8. "Junior Officers" are all the officers with salary below £456 per annum. Public Service Commission Regulations, section 9(1).
9. Public Service Commission Regulations, section 2(2).
10. The Forest Act, Section 7.
11. There is an intention of having at least one forester in each administrative district. Currently, most of the districts have a forest officer, styled Rural Afforestation Extension Scheme Officer.
12. Union of Kenya Civil Servants is not affiliated with the Central Organization of Trade Union (C.O.T.U.) which is the major union amalgamating several unions in the country.
13. The Trade Dispute Act, Cap. 234, section 19.
14. Section 36 of the Trade Dispute Act.

15. "Timber" under the Timber Act, Cap. 386 means the wood of any tree grown in Kenya, Tanzania or Uganda, whether such wood is unsawn, hewn, sawn or machined and includes lumber, shooks, slabs, blocks, box boards, flooring strips, shingles and sleepers, but does not include any other article manufactured from such wood.
16. Section 4(1) of the Timber Act.
17. Section 4(3) of the Timber Act.
18. Section 4(4) of the Timber Act.
19. Section 5(2) of the Timber Act. For example timber which is undersize and diseased is unfit for grading.
20. Section 5(4) and (5) of the Act.
21. Prescribed mark here means a mark prescribed in the Timber Rules for placing on timber of a specified grade or origin.
22. Section 7 of the Timber Act forbids immitation.
23. Section 13 of the Timber Act.
24. "Offence" is as defined in Penal Code section 4. It is an act, attempt or omission punishable by law.
25. The Forest Act, Cap. 3, 1911 section 4(f).
26. "Compounding offences" means to accept summary fine in lieu of court prosecution pursuant to section 10 of the Forest Act. The accused may refuse the settlement. The officer compounding has also discretionary power to compound the offence, or hand over the accused to court for trial.
27. Criminal Procedure Code, Cap. 75 stipulates that one must be handed over to a magistrate with jurisdiction within twenty-four hours. Section 32(3).
28. Criminal Procedure Code, section 82(2) stipulates that the Police Officer must be of the rank of subinspector and above.
29. The Uganda Forestry Act had different ceiling for compensation thus reflecting seniority of different officers.
30. "Take" is when person moves the thing or causes it to move. Penal Code section 268.
31. A wild animal in its natural liberty is not capable of being stolen. Its dead body is however capable of being stolen.
32. Penal Code section 268(3).
33. Section 275 to 279 tabulates penalty for stealing various items but no mention of trees is made.
34. Authorized officer here means a forest officer also among other officers pursuant to section 2 of the Wildlife (Conservation and Management) Act.

35. "Trophy" means any protected or game animal, game bird, or any of its durable portion such as tusk, skin, claw, tooth, bone, hair, feather, egg or hoof.
36. Senior Officer in case of forest officers means Officer of a rank of Assistant Conservator and above.
37. Under Forest Act, Forest Officer has no power to prosecute in court.
38. Section 54 of the Act.
39. Forest Officer included among competent authority - under the Trout Act.
40. Sections, 10, 11, 12 and 13 of the Act.
41. Public here refers to anybody apart from the forest employees.
42. It is still a theft even if one wants to refund the money. Penal Code, section 268(e).
43. Public Service Commission Regulations, section 26(1).
44. Section 39(2) of the Regulations.
45. Senior Officer with salary over £1348 per annum.
46. Section 34(2) of the Regulations.
47. During interdiction an officer thus interdicted is entitled to at least half of his basic salary, while if he is suspended he is not entitled to any salary during the period of suspension. During interdiction or suspension, an officer may not leave his duty station without permission of authorised officer. Section 23 and 24 of the Regulations.
48. Section 25(3) of the regulations.
49. Section 41(3) of the regulations.
50. Penal Code, section 280.
51. Cf. Ghana Forest Act, Cap. 157 which imposes a maximum of 5 years imprisonment or fine of £495. 1 British £ is equivalent to 15 Kenya shillings.
52. Section 13(f) of the Timber Act. Also section 8(3) makes provision for forfeiture of timber or its equivalent value if offender is not the owner of the timber.
53. Section 45(5), 40(5) and 13(2).
54. Destruction of trees in practice is not an issue in National Parks.

55. Section 29(2)(e) of the Agriculture Act.
56. (1) Lake Victoria (South) Catchment Board;
(2) Lake Victoria (North) Catchment Board;
(3) Tana Catchment Board;
(4) Northern Ewasonyiro Catchment Board;
(5) Athi Catchment Board;
(6) Rift Valley Catchment Board.
"Water (Catchment Board) Rules, L.N. 146/1964/65."
57. Conservation here has a meaning of rational use of water.
58. Section 19(3)(c) of the Water Act.
59. "Works" means any structure, apparatus, contrivance, device or thing for carrying, conducting, providing or utilizing water, excepting hand utensils or any contrivance that may be specified by the Water Apportionment Board.
60. Section 38 of the Water Act.

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60. Section 38 of the Water Act.

CHAPTER SEVENCRITIQUE AND REMEDY OF FOREST LEGISLATION¹1. INTRODUCTORY

(a) The criticism of forest legislation is mainly criticism of the Forest Act because it is the one which deals essentially with the forest issue. Other Acts give only scant consideration to forest affairs. The Forest Act would therefore be expected to be self-contained as far as the forest legislation is concerned. It is not. The Act is drawn so broadly that most of forest issues are left to the absolute discretion of the Forest Department. While too detailed legislation would not be desirable, too broad legislation like the Forest Act does not adequately serve the public interest. It is the sound balance that must be sought in the management of forest resources, in which the public has so much at stake.

(b) A striking feature of the Forest Act is that it does not impose duties on the Minister, and by implication, the Forest Department. Therefore even in a situation where omission of a certain action would be detrimental to the public interest, an order of mandamus would not lie. There is no failure to do a statutory duty. To whom does the Act speak? It speaks to the public by its various prohibitions and suggests to the Minister the powers he may exercise. In the exercise of these powers there is an underlying implication that they are not mandatory but permissive. Throughout, the use of the term "may" in respect of power is the order of the Act. "Shall not" is used only in connection with the various prohibitions to the public in section 8.

(c) A salient feature of such skeleton legislation is that most actions by the Forest Department are discretionary and usually based on expedience. There are no standards set by the Forest Act against which the performance

of the Department may be measured. In such situations, it would be difficult to sustain an injunction against administrative actions for in the absence of statutory guidance, there would be no law being violated by the Department's actions, however improper such conduct may appear. The Department has its own internal orders usually actuated by real or imagined mistakes in the field. As the civil servants come and go, and bearing in mind that what is panacea for one civil servant may be anathema for another, it would be unwarranted gambling with forest resources to maintain such broad legislation. The Act should mandate the Department with powers and duties, pointing for example to the practices that may not be licensed. As it is, any exploitation even if it means irreversible and irretrievable damage to the environment, can virtually be carried out, provided the agent has a licence from the Department.

(d) The other major shortcoming of the Act is that it is applicable only to the Forest areas - and gives some scant protection to trees on unalienated government land.² In practice this means that trees and forests outside the realm of forest areas³ are not protected. Corollary to this is the fact that the nonmonetary benefits accruing from forests in the country and which do not respect man-made boundaries are seriously jeopardised by this lack of statutory protection. Because of these indirect benefits the public has legitimate interests in the forests regardless of ownership.

In the light of these generalizations, examination of reservation, protection, utilization and the role of forest officers does highlight some of the major short-comings of legislation covering forests. In each case, remedy is suggested where the law is silent and in cases in which compliance with legal provisions would entail poor forestry.

2. RESERVATION

(1) When the Forest Act was modelled on the Indian Forest Act, Cap. 7, 1878,⁴ one of the provisions that was forgotten was that of inquiring of the customary rights in forest areas and subsequent settlement of these rights.⁵ The Forest Act does not contain this provision, neither has it ever said that the rights are extinguished. The legislative oversight has had serious repercussions on the forest areas. Because there has never been once-and-for-all legal determination of various customary rights, some forest areas have had to be excised to satisfy some of the right-holders. Because of the lack of earlier determination of claims, excision of forest areas has triggered unfounded claims over various parts of forests. Even now there are squatters in some parts of forests hoping to acquire land ownership at some opportune time. The Act should urgently extinguish officially all customary rights in connection with ownership of land either by compensation in monetary terms or by a mere declaration in the public interest. The activities of squatters with lingering hopes of eventually acquiring ownership of land in forest areas has been an obstacle to forest management and is certainly detrimental to environment.

(2) The other minor oversight was the failure to reserve some forests for the community around villages, distinct from forest areas, but with some protection. Such forests areas might have created more awareness of forest uses and would also have eased some pressure on the current forest areas. Such village forests are now only possible in the case of Trust Land and should be given priority in the event of reserving Trust Land Forests.

(3)(a) Section 4(1)(a) of the Forest Act stipulates that the Minister may declare any unalienated government land to be a forest area. The section limits the Minister only to the unalienated government land. There is there-

fore a very limited amount of land that the Minister is empowered to create forest areas from. The section is therefore seriously inadequate in the sense that it does not empower the Minister to declare any other land to be a forest area even where the public interest would dictate. If one looks to the Land Acquisition Act for help, one finds that among the purposes that would qualify for public interest, afforestation is not one of the purposes that would justify compulsory acquisition of land pursuant to section 6 of the Act.⁶ Instead of confining the Minister to the unalienated government land, the section should extend the provisions of the Land Acquisition Act to the acquisition of land for forestry purposes. This would enable the Department to acquire some of the land which is best suited for afforestation. Such extension would particularly be ideal for some of the trust land forests. It would be in the spirit of the constitution because in any case section 118 of the Constitution stipulates that land can be set aside for government purposes. Forestry purposes could be understood under government purposes which in this respect is not analysed.

(b) Section 4(1)(b) stipulates that the Minister can alter the boundaries of forest areas and section 4(1)(c) goes further than that by empowering the Minister to declare that a forest area shall cease to be a forest area. In other words, he has power to relinquish any forest area. All he needs is to declare his proposed action of alteration of boundary or outright excision by giving twenty-eight days notice.⁷ The ease with which the forest area can be relinquished threatens the foundation of forestry practice with all conceivable repercussions. Meaningful management of forestry must be done on a basis that is as far as possible permanent and this can only be realised with a settled land status. With the current provisions of excision, use of any land for forestry purpose can be viewed as potentially temporary. More safeguards should be made by requiring a public inquiry

to be conducted. There should be a period of six months in which objections to excision are entertained. After the end of six months, six alternate weekly Gazette notice with an environment impact statement should be issued. After that, the matter should be taken to Parliament and excision or any alteration of boundary causing material decrease of forest area should only be effected after Parliament has by resolution consented.⁸ Failure to comply with the procedural requirement should invalidate the excision. There is no conceivable and justifiable hurry to decrease the already overstrained forest area. See table 4 on addition and excision, Chapter 3.

(4) In declaring a forest area, the declaration is for the block as one unit without legal differentiation of various categories of forest areas. It is only in some cases that an area is declared as a nature reserve pursuant to section 6 of the Forest Act. Whether an area is used as a water catchment or productive forest, the reservation of land as such is entirely at the discretion of forest officers. Lack of statutory provisions for classification of forest areas has meant that some dominant end uses may prevail at the expense of others even if public policy would say otherwise. Forest land should essentially be classified legally into Productive forest; Protective forest; Nature reserve; and Wildlife and recreation areas. For any proposed excision or alteration of boundary, the uses to be effected should unequivocally be detailed in the public interest. When classification is discretionary, it can be challenged as being a matter of opinion and convenience, thus possibly altering the management system. If the challenge has a commodity interest, it could mean exploitation of protective forest and if he is conservationist it could mean withholding legitimate utilization of forest resources. Different forest officers could also have different management techniques depending on their interpretation of the concept of multiple-use.⁹

(5)(a) In reservation of a nature reserve, typical of the Forest Act, section 6 simply and briefly says the Minister may declare any forest area to be a nature reserve with the object of preserving flora and fauna. The area first of all should be a forest area and as described above the declaration of forest area is severely limited. There is therefore no provision to acquire and protect statutorily unique ecological systems outside the forest area, even where irreversible damage is foreseen. That is not all. Even in the forest area section 6(2) prescribes no cutting, grazing or removal of forest produce and in the same paragraph, it gives exception to some activities provided one has the permission of the Chief Conservator. The requirement that such action have object of conserving the flora and fauna does not make preservation of nature reserve any more secure because many radical activities can indeed be done in the name of "conservation." The word has a recent connotation of rational use.¹⁰ Actions such as those aimed at genetic improvement would certainly and appropriately fall under conservation. Genetic variation which is man-induced is inconsistent with the idea behind the creation of a nature reserve, so also are other activities such as the removal of dead trees if done with object of conservation. The object of a nature reserve should be preservation of primeval characters where the forces of nature alone interact without man's interference.¹¹

(b) The section also fails to require that a study should be carried out to delimit a manageable and functional ecological unit. What is the consequence of this omission? Many nature reserves are described on a map without enough ground work beyond that of recognising a few species. Therefore boundaries have been arbitrary and it becomes extremely difficult to protect such nature reserves from destructive agencies usually associated with utilization of the adjacent forests. With proper study, nature reserve would as far as practical be bounded by a topographical feature such as a ridge, river, or road and should be of sufficient size to sustain the species

to be protected.¹² Such boundary would then isolate a nature reserve from detrimental impacts such as fire, accidental grazing and the felling of trees. Proper legal provision would hence assist in the maintenance of an integral nature reserve with distinct ecological and geographical identity. Unclear classification of nature reserves in practice had meant total relinquishment sometimes after encroachment by irreversible and irreparable impairment.

(c) In other cases, the nature reserves are inordinately large and were declared pending future use and not with the aim of preservation of pristine characteristics of vegetation. They have therefore been a fluid rather than a permanent feature, detracting from their value for scientific study.

(6) For proper maintenance of the integrity of a forest area without the encroachments which have plagued the forestry management, it is essential that survey beacons and any other boundary mark be maintained unmistakably. Section 8(1)(xii) prohibits meddling with the survey beacon, again speaking to the public. There is no duty imposed by the section on the forest officer to inspect and report periodically that the beacon is intact. As quite a number of boundaries do not have natural features because of practical problems associated with early reservations,¹³ there should be stipulated by regulation a minimum distance between beacons on any such unnatural boundary. The beacons should also be numbered serially for each forest area, for ease of checking. Maps of forest areas showing beacons are maintained as a matter of practice but not as a statutory requirement. Neither does the Forest Act make provision for updating maps of various forest areas. It should do this by regulation.

(7) The procedure used in determination of rights in land, pursuant to the Land Adjudication Act, Cap. 284, does not take into account the inviolability of forest areas in a number of cases.¹⁴ Section 6 of the Act requires establishment of a local committee made up of at least ten people resident within the adjudication section. There is no statutory requirement that a forest officer should be a member of such committee to guide the members on areas that should not be parcelled out for individual ownership. As a matter of practice forest officers are not members of such committees. What are the consequences? While consideration is given to provisions of schools and trading centres, no land is reserved for forest purposes. Some extremely steep areas fit only for protective forest are allotted. Water catchment is also not given consideration as most land is practically claimed and it is only in the case of an obvious body of water that land may be left for public purposes. Mandatory presence of a forest officer, familiar with the local conditions, could advance the public interest better. Related to this adjudication process is encroachment of forest areas by various claimants and, in other even more serious cases, adjudication of forest areas in complete defiance of legal status of land or, in some cases, in good faith that the land belongs to the claimant in accordance with the customary rights. Even if the local forest officer is not a member of the local committee, he should be given a hearing. A provision that in each adjudication area, before claims are finalised a forest officer will appear before the committee and be heard would be apposite. It is rather complex, once certificates of ownership are issued, to regain the status of forest area and the matter is made worse by absence of any clause in the Forest Act stipulating that any adjudication of forest areas is null and void until the formal excision procedure is followed.

3. PROTECTION

(1) Cutting:

(a) In forest areas, one can say forests are reasonably protected from cutting. Except in nature reserves where cutting is specifically forbidden¹⁵ no tree in the forest area is immune from a licensee, as can be inferred from section 8 of the Forest Act which prohibits several actions if one has no licence. As there is no legal differentiation of, for example, protective forests,¹⁶ it logically follows there is no legal protection of such forests against licensees. They are protected at the discretion of the Department. The degree of protection is certainly influenced by officers' personal judgement on what they consider to be water-catchment. As mentioned earlier, legal classification of forest areas should be a pre-requisite of forest management.

Some protection of trees on unalienated government land is provided by section 8(b). Since unalienated government land excludes government land dedicated for public use,¹⁷ it logically follows that trees on sensitive areas such as roadside reserves are not protected as far as the Forest Act is concerned. Unalienated government land should be expanded to include all government land not yet leased to anyone or for which no letter of allotment has been issued.¹⁸ The fact that prohibitions of other potentially destructive actions such as burning and grazing are not extended to the unalienated government land, makes it doubly difficult to visualize effective protection in conformity with section 8 of the Act.

(b)(1) The Forest Act has no provisions for protection of private forests.¹⁹ The Agriculture Act is comprehensive on the promotion of agricultural crops. The Act recognises retention of woodland and generally forbids cultivation which might result in soil erosion,²⁰ but it is silent

on total destruction of forests for farming purposes. Considering the views of agricultural officers who are committed to production of food,²¹ and the statutory requirement in the Government Land Act which recognises clearing of forests for agricultural purposes as permanent improvement,²² it does not seem that forests on private land are protected adequately. When forest lands are cleared, there is no restriction on, for example, the minimum number of trees that must be reserved per hectare. The law should by regulation stipulate the minimum number of trees that must be left and require submission of detailed plans for tree preservation and soil conservation.

(ii) The various financial incentives advanced to farmers in accordance with the Act for the various agricultural crops²³ are not extended to afforestation schemes in private forests. One cannot unduly blame the Agriculture Act, for laws on planting of trees would rightly be expected to be dealt with by the Forest Act. They are not. The Act is totally silent on this question. A scheme of financial incentive for private forests might significantly enhance effectiveness of the forest conservation. Man has a tendency to discounting over time with a natural preference for present value over future value which is fraught with risks and uncertainties such as inflation and loss or deterioration of assets.²⁴ A scheme of soft loans or free grants for private afforestation would be a desirable legal framework on private forests. Inadequate provision in finance acts for the peculiar nature of forestry and afforestation is a serious failure.²⁵

(c) There are some scarce species of trees in the country that are in danger of extinction and it would be in the public interest to preserve such species.²⁶ Undeniably, such species are scattered in the country regardless

of land ownership status. The high degree of protection afforded in the nature reserve is therefore inadequate when the country is taken as a whole. The Forest Act should explicitly tabulate such trees species and give them higher degree of protection by regulation especially in the country-side. A stipulation for example that when such a protected tree is cut at least three more trees of the same species will be planted on the same site would contribute to the protection of scarce valuable species.²⁷

(d) Considerable numbers of trees have suffered from the statutory provision of the Electric Power Act, Cap. 314 which provides for the lopping, topping and felling of trees that interfere with the electric supply. There are two issues involved. On the one hand is public safety and on the other is the damaging of trees maintained for easthetic and other purposes. While it is indisputable that public safety should prevail, section 64 of the Electric Power Act, should stipulate that detailed studies of alternative routes must be presented before destroying trees.²⁸ The costs of destroying trees must be shown to be less than those of re-routing of supply lines. The methods used for lopping and felling by the power agents leave much to be desired. Although the section makes a provision that would should be cut in a woodmanlike manner,²⁹ all the agents need to have is cutting tools and willing employees. The section makes a provision for compensation, and anyone aggrieved by the conduct of the power agents may appeal to the Minister.³⁰ The Minister may then direct what action shall be taken after a hearing. The agent may then give a reasonable notice to aggrieved party after which he proceeds with his proposed course. There is an assumption here that the Minister shall agree with the agent's proposals as indeed would most likely be. There is a further provision that one can eventually go to court if unhappy with the Minister's decision. Even though an exparte injunction would stop cutting, the section fails to say that if one is un-

happy with the Minister's decision and is seeking a court injunction, the proposed felling of trees should not take place. The term "reasonable notice" is indeed vague in this respect because even before one files a suit, the trees may already be felled which may be virtually an irreversible process. Money damages may not be a satisfactory remedy. Certainly, the massive Electric Power Act is meant to advance the interest of power distribution with as few obstacles as much as possible. There have not been reported cases in connection with power supply and destruction of trees that might interfere with maintenance and construction of power lines. Few individuals would be inclined to start litigation with the power corporation, a financial giant that would anyway set off such legal expenditure against profits for tax purposes. The Forest Act is silent on the destruction of trees in connection with power supply and indeed with other agents with statutory right of way. It is ironical that the Power Company which is dependent on an orderly flow of water, a major role of forests, has shown no interest in forests. A legal arrangement should somehow be made whereby the Power Company directly contributes towards afforestation and protection of water-catchments. It is the Forest Act which should initiate the relationship, as the Power corporation would be most unlikely to initiate a scheme that will be another call on its purse.

(2) Fire:

(a) Typical of the Forest Act, section 8 of the Act prohibits unauthorized burning in forest areas. On unalienated government land, one may not burn in the vicinity of forest areas in such way that such burning would jeopardize forest areas. The Act however, fails completely to concern itself with land use practices that have accounted for most of the devastating forest fires. For example, shifting cultivation antedates forestry

practice and forestry management has found it a convenient tool without any legal restriction. Essentially, before establishing a new plantation, people set fire to indigenous forests to clear the land and two or more agricultural crops are planted before the trees are planted. The law should restrict the use of fire for land preparation, for in practice it gets out of control and burns areas not intended to be burned immediately and drastically alters the microorganism and wildlife balance, reached after thousands of years. Besides, when trees burn, most of the essential nutrients, notably nitrogen compounds, are volatilized. A new Forest Act should seriously curtail the use of fire in shifting cultivation in view of the consequences.³¹

(b) The Forest Act is also silent on fire breaks. The firebreaks provided for by the Grass Fire Act, Cap. 327 are mainly on the boundary of peoples' property.³² Besides such boundary on the outskirts of forests, the Forest Act should stipulate by regulation minimum internal firebreaks. As it is, it is left to the discretion of the Department. If in one area such firebreaks are not given appropriate priority when compared with other management activities, considerable forest resources may be lost. There are for example in practice no firebreaks within indigenous forests and establishment of such firebreaks when fire is raging is usually futile.

It is a failure of Forest Act to be so inexplicit on contiguous lands as far as fire is concerned. By reason of fire getting out of control, burning within a certain distance of forest area should be forbidden without the express permission of Forest Officers. There is the same prohibition of burning in the vicinity of forest areas in case of unalienated government land. "Vicinity" is a vague term and a definite term such as two kilometres from the forest boundary would be more appropriate. As for burning on other

land, likely to jeopardize forest areas, if one looks to Grass Fire Act for help one finds that provided one has given two days notice to owners of land within half a mile from property, one may burn. Half a mile is indeed a dangerously short distance for grass fire spreading and forest could be burned just outside the half mile limit. To make matters worse, burning in reserve areas³³ is excepted from provisions of the Grass Fire Act, except only for the land within half a mile of land outside the reserve area. Lack of legal fire restriction in reserve area, both by the Grass Fire Act and the Forest Act subjects protective forests such as in Samburu and Marsabit to unfair risk of burning.

(c) Section 15 of the Forest Act briefly stipulates that the Chief Conservator may ask any licensee to provide assistance in preventing and fighting forest fires. The licensees should not only assist in fighting fires but each wood processing mill in forest areas should have to fit fire fighting equipment. The law should go further and stipulate that forest officers may close any mill for failure to clear debris and any other waste which may cause fires. If there is noncompliance with fire prevention measures, the licence should be forfeited after some given period. During the fire season, the licensee should monthly submit a report on fire prevention measures.³⁴

The effectiveness of fire prevention and fighting depends on the cooperation of the public. The Forest Act fails to stipulate that besides the licensee, the public should co-operate to fight fire within a certain definite distance from fire spot. Section 12 of the Grass Fire Act limits the people who can be called to assist in fire prevention to that section of the public in the "vicinity" of fire. Apart from the occupier and owners of land there is a very limited number of officers³⁵ who can autho-

ritatively ask public to assist in fighting fire likely to be dangerous.

The Administrative Officer is an obvious omission. It is unfortunate that the Forest Act gives rights to some communities and no corresponding duties to help in preventing and reporting fires which would threaten the very forest resources over which they have some legal rights. In fact, failure to comply with such fire control duty should be sufficient cause to extinguish the rights.

(d)(1) As a matter of practice, when forest vegetation dries and risks of forest fires become great, various forest officers declare a fire season in otheir jurisdiction when burning of all kinds in forest areas is prohibited. There is no coordination between the forest officers declaration of the fire season and the legal prohibitions of burning pursuant to section 5 and 11 of the Grass Fire Act. The declarations by the forest officers are communications within the department and are of no legal effect.³⁶ The administrative directives mainly meant for the licensee and employees likely to use fire are issued on a discretionary basis and the Forest Act is also silent on this issue. The legal prohibition in conformity with the Grass Fire Act becomes effective after fourteen days of publication in case of those emanating from the Director of Agriculture, and for those coming from the local authorities the notice becomes effective after seven days. One wonders why the prohibitions cannot take effect immediately. Such delay might in fact result in indiscriminate burning to beat the deadline and this could very well have the opposite effect from the intention of prohibition. The exception of some people from such prohibitions as stipulated, an unfortunate loop-hole which could lead to abuse of the provisions meant to minimize fire hazard.

(ii) The Forest Officers declarations should have legal effect and be sanctioned by the Forest Act. Such declaration should also bind the public within the area specified by such notice. Such declaration should be supplemental and not in derogation from the provisions of the Grass Fire Act.

(e) In an effort to stamp out various unauthorised activities associated with the use of fire, section 11 of the Forest Act empowers Forest Officers³⁷ to destroy any honey barrel (hives) placed without licence in forest areas. The provision is ill-advised and contrary to the spirit of the constitution³⁸ which guarantees protection of property. The only circumstance under which the constitution visualizes destruction of property is when the property is injurious to the health of human beings, animals or plants.³⁹ A honey barrel or indeed any other receptacle meant for collection of honey does not pose a threat to animals, people or plants under normal circumstances.⁴⁰ The destruction is therefore not justified as stipulated in the Forest Act. In practice officers would find impounding such barrels inconvenient, but should not be an excuse for practices contrary to the spirit of the constitution. The appropriate thing would be to charge the culprit or remove the barrel to be disposed of like any other property.

(3) Grazing:

(a) The major issue here is not such much the need to check the number of animals on any given area of land as that some animals are more destructive than others. The Forest Act does not specifically exclude goats from forest areas. The policy of the Forest Department in keeping goats away from forest areas has no legal backing and could very well be challenged as ultra vires.⁴¹ Goat keeping is inconsistent with some forest management practices and the Forest Act should stipulate the conditions under which goats may not be kept. The provisions of the Act on grazing are fairly general and not

only fail to outlaw grazing in some protective forests, but does not stipulate grazing reassessment to avoid the consequences of exceeding the carrying capacity of any given land.

While the Agricultural Act makes provision for controlling livestock in the countryside to avoid soil erosion⁴² it has no provision for protecting potential trees from livestock. In fragile areas goat husbandry is inconsistent with the conservation of forests and indeed any vegetation essential for the protection of the environment. Goats are an integral part of livestock and the Agriculture Act does not visualize conditions under which goats may not be kept, presumably to avoid conflict with some communities for which goats play a major role in the economy. If goats are not outlawed, legal provisions prescribing the maximum number of goats that may be kept in any given area should be made to avoid further desertification attributed to their feeding habits.

(b) There are some occasions when wildlife poses a threat to vegetation but while there is some control of domestic animals, it is apparently difficult to control wild animals because in any case any population census on the animals is an approximate estimate. Migration of animals also makes any population estimate very imprecise. The problem associated with the determination of optimum level of animal populations should not be an excuse to adopt a laissez-faire policy on the interaction of animals and vegetation in the parks and also the land outside the National Parks. It is common knowledge that elephants have destroyed most of the trees in Tsavo National Parks and no efforts are made to protect even those trees along the Nairobi-Mombasa highway. Provision for fencing around some aesthetically valuable trees especially on the road reserve should be made, whether

indigenous or planted. Some other trees should have wire gauze to prevent debarking by some animals, a feeding habit which ends up by killing the main tree. The Wildlife (Conservation and Management) Act should mandate the Game Department to protect scarce species in danger of extinction due to their palatability. Forest Officers should have the duty of identifying endangered species and of initiating of tree nurseries in parks for enrichment planting. When the views of forest officers and game officers conflict, there should be an arbitration board to settle the issue.

(c) In National Parks, destruction of forests by cutting and burning mainly associated with utilization of forest resources is rare and done only clandestinely. The major possible destruction is from the animals, the dominant resource in the National Parks. Protection provisions should therefore be embodied in the law. Any protection of fencing⁴³ means to some extent, curtailment of freedom of movement by wild animals. Such restriction of animals is inconsistent with the concept of wildlife and in the absence of express stipulation the circumstances under which it may be applied, any fencing to protect vegetation would be ultra-vires. There is a widespread practice by the Forest Department of constructing fences to keep away wildlife. On examining the various purposes for which the Forest Act empowers the Minister to make rules, and bearing in mind the rule of ejusdem generis, it is evident that construction of moats and any other form of fence to keep off the wildlife from forest plantations is beyond the scope of the Act. It is a sensible and perhaps the only practical action in some circumstance, but illegal, all the same. The Forest Act should contain provision for fencing some plantations or some valuable species which could otherwise be devastated by wild animals and livestock.

Taken as a whole, the Wildlife (Conservation and Management) Act is thorough in licensing and hunting procedure, but it fails to see the role of forests, so essential for the welfare of animals. As the pressure for land use increases in the country, more and more private land is being withdrawn from the use of wildlife by other uses such as cultivation.⁴⁴ There is also a growing hostility between ranchers, especially in marginal land, and the Game Department. Ranchers argue there is undue competition between wild animals and the livestock on the available forage and that any compensation scheme as provided by the Act is unsatisfactory. As is evident in a number of local meetings⁴⁵ where confrontation between the two groups has generated more heat rather than light, the future of wildlife lies in the parks and forest areas and not in private lands. The Wildlife (Conservation and Management) Act should unequivocally mandate the Forest Officers with the duty of all forestry management techniques in national parks other than exploitation of trees. The Forest Act as a matter of urgency should extend its protection provisions to the national parks.

(d) In communal lands, the main shortcoming with legislation is that no balance is sought between customary grazing rights and the carrying capacity of land. The matter is aggravated by the fact that even in group ranching pursuant to the Land (Group Representatives) Act, Cap. 287, ownership of livestock is individual while ownership of land is communal.⁴⁶ The Act is silent on destruction of trees and possible afforestation.

(4) Diseases:

(a) It is a major legislative oversight for the Forest Act to fail to come to grips with the issue of forest diseases⁴⁷ which indisputably could wipe out the many monoculture plantations, established over many years at a great cost. The indigenous trees similarly are not immune to tree diseases.

Section 15(1)(a)(ii) of the Forest Act in passing reminds the Chief Conservator that he may ask any licensee to assist in control of noxious insects or fungi when the Chief Conservator has declared such disease in the Gazette. This provision is binding only to the licensee and does not give the Chief Conservator wide powers of preventing, detecting, inspecting and treatment of tree diseases in the country.

(b) The Plant Protection Act, Cap. 324 is detailed in protection of plant diseases. As is evident from the reference to Director of Agriculture and indeed the various diseases dealt with by the Act, the provisions are meant for agricultural diseases and not forest diseases. For the Forest Department to rest on the provisions of the Plant Protection Act is tantamount to admitting that there is no difference between agricultural diseases and forest diseases. There is a very great difference. Forestry professionals tend to ignore agricultural problems in training and similarly agriculture profession training does not concern itself with trees other than those which are fruit bearing. Forestry looks at trees from a timber point of view. Although there may be some overlap of diseases, this is the exception rather than the rule. The Forest Act should therefore be elaborate on forest diseases to guide the research unit within the Department.

(c) Without laid-down standards of disease control, research officers who tend to be individualistic in research projects may overstep their limits in good faith.⁴⁸ As it is, any form of research on diseases can be undertaken in accordance with the Government's declared policy that research should be carried out. Related to research is importation of vegetative matter either as seeds or cuttings. The imported material is for experimentation or for direct planting in the case of the material of proved

superiority. The Forest Act is silent on this importation issue of cuttings and seeds. It is usual to hear the research officers reaffirm their avowed policy of following international standards of plant health and quarantine. Who is to measure the performance of research officers against the international standards? It is left to themselves to judge their procedure against international requirements.⁴⁹ The Forest Act is very much silent on this issue, even though it could mean irreversible damage to forests. The fact that there has not been any very serious loss from diseases⁵⁰ should not be an excuse to omit such essential provisions from forest laws. The provisions for treating or destroying infected wood in the Timber Act, Cap. 386, are actually meant for timber which is being exported. As far as the Forest Act is concerned, it does not provide protection against introduction of diseases to the country.

(d) The Forest Act should have provisions with necessary safeguards against imported diseases. Preferably quarantine areas should be far from the site where the plant material will eventually be tried. Such areas should therefore be isolated by natural features as much as possible to minimize accidental spread of diseases. There should also be provisions empowering the Chief Conservator to seek assistance of anybody in eradicating tree diseases wherever situated.

4. UTILIZATION OF FOREST RESOURCES

(1) The four traditional uses of forests are production of wood; conservation of soil and water; scientific, research; educational and historical interest; recreation and wildlife. The four types of forest classification to meet these uses would be as set out on reservation.⁵¹ A provision in the Forest Act that each type of forest will only have stipulated use as dominant would ensure that there is legal provision

preventing, for example, large scale exploitation of timber from protective forests. As it is, the entire range of utilization decisions is discretionary by the Department entrusted with management of forest resources. The essence of classification is that a wrong use maybe difficult to rectify and the damage may in fact be irreversible. Conflicting interests can also be accommodated side by side rather than resorting to short term measure which ultimately may not satisfy any interest fully.

(2) Another serious omission in the Forest Act is working plans provision. Working plan is the basic tool of forest management and it is the backbone of forestry profession. The Forest Act should make it obligatory to have a working plan for each forest area at least before any utilization activity. The working plan must contain the following details as standard:-

- (a) Maximum area from which forest produce may be disposed;
- (b) Maximum quantity of forest produce or the allowable cut;
- (c) Silvicultural operation to be carried out;
- (d) Protection and development operation to be carried out.

The plan may of course contain any other detail but failure to have the above information should be non-compliance with statutory duty.

It is indeed difficult to visualize the concept of management of forests on sustained yield basis, without an up-to-date working plan. As a matter of practice the Department uses working plans. There is however, no statutory requirement that such plan must be up to date or must be made for any new area. What is one of the consequences? The Department has been using some forest areas without working plans and in many other cases the plans have long expired. Because of other duties, this field of professional discretion has suffered.⁵² The private forest owners and county council officials wishing to manage their forests in an orderly manner

are unlikely to do so if working plans are not mandatory pursuant to the Forest Act which does not in short recognize working plans. Provision of working plans should be a prerequisite for forest management.

(3) Related to the working plans is communication between the Forest Department and the wood using industry in forest areas. One can safely say that there is very little, and this on only one direction. Apart from sending information in connection with determination of selling price of timber, which is done yearly, the wood using industries are not obligated to send returns of their performance. The only other return required is in connection with the export of timber, a very rare thing indeed. The Forest Act should have a provision that each wood using industry will monthly send among other details, the quantity of raw material obtained, the quantity of end product, the quantity sold and monthly returns of employees. From such hard facts, assuming them to be reliable, analysis would be able to illuminate the conversion rate, and the efficiency of industry with possible remedial action. The Department would also be able to have countercheck figures and such information could expose any mistakes or mischief in connection with measurement of forest produce. Also redistribution of relevant information to the wood industry would possibly make some industries reassess their performance. Hence, legal provision of such communication would be in conformance with the Department's avowed policy to promote wood-using industry.

(4)(a) The Forest Act empowers the Chief Conservator to issue licences and in this respect he can delegate his power. There is no qualification as to what may not be subject to a licence within the scope of the Forest Act. A licence is a double-edged sword. While it is an efficient tool for regulating various utilization activities, it can be abused in the field especially

when delegated to an officer lacking in vision. The Forest Act should state the circumstances under which a licence may not be issued for some activities. For example, issuance of licence for exploitation above allowable cut seems essentially bad forestry. Similarly there are other areas where preservation of vegetation would be paramount and any licensing should be made ultra vires.

(b) As the Forest Act is applicable only to forest areas, it has necessarily failed to regulate private forest utilization. There should be a provision that private owners of trees shall need a licence to cut wood above a certain quantity which should depend on domestic requirements and the recommendations of the local forest officer. In connection with private forests, some reserved trees may be cut only when it is completely necessary and provision to replant such tree should be one of the conditions of a permit.⁵³

(c) The Trust Land Act makes unfortunate provision that the licensing officer is either County Council employee or an administrative officer for utilization of forest resources.⁵⁴ When it is a question of grazing, the county council should make use of professional agriculturalist as licensing officers. When it is a question of timber utilization, a forest officer with the necessary professional expertise should be the one to handle the licensing. It is common knowledge that unplanned licensing in county council forests has resulted in unwarranted depletion of timber in several areas under the jurisdiction of various county councils.

(5)(a) Utilization of forest resources by the right-holders leaves much to be desired. Essentially the Forest Act stipulates that certain people may use forest resources without licence or payment of royalty or fee as

the case maybe. While one may not quarrel with non-payment provision for forest resources, it makes it very difficult to police forest resources if one group needs a licence and another one does not need a licence to do various activities in forest areas. There is uncertainty to policing according to section 11 of the Act. Any officer charged with a duty to ask for a licence will be puzzled to find that for example an inhabitant of Baringo⁵⁵ or Nandi Land Unit⁵⁶ may cut and collect firewood from dead tree without permit or charge. There is no corresponding provision for an inhabitant of Kericho, though it is difficult to distinguish the two. This uncertainty makes policing ineffective for anyone traditionally brought up with the rule of law. All right-holders should get whatever they are entitled on licence or permit. This would also enable forest officers to know what is being removed from forests, besides making supervision and policing more effective.

(b) The other feature of these customary rights which have been legalised is that the forest resource must be for personal use and not for barter or sale. Some of these right-holders are rich business people. They qualify for these rights by virtue of being born in the particular area. If one has an industry which uses firewood, as may well happen, and the end product is for example bricks or a local brew such as "buzaa"⁵⁷, he can legally get all wood free. It is for his personal use, not for sale or barter. As the industry could be his personally, he will not have contravened provision of the Forest Act. This indicates that the quantity should be limited to avoid mischief and abuse of the rights. There is also migration of people from one area to another and giving legal rights to an unspecified number of people is ill-advised. These rights should be given on personal basis with a clear indication whether the rights are inheritable or die with the holders.

(6)(a) In enumerating the rules that the Minister may make, the Forest Act starts off with felling and does not look at what precedes felling. Before felling it is customary to mark the trees which are to be felled either individually or as an area. For an identifiable area to be clearfelled there is no need to do the marking. In case of thinning however, marking is done by blazing the trees to be felled. The principle behind this silvicultural operation is to remove weak and deformed trees leaving more room for the vigorous trees to grow. It is therefore necessary that the trees to be felled be properly branded. A user requires a better tree and can easily blaze more trees for himself, and once on the ground one blaze looks like another one, leaving no evidence for a breach of Departmental rules. Overthinning is not uncommon and the Forest Act should forthrightly say by regulation a special hammer mark shall be used for branding trees above a specified minimum size before being felled in any selection cutting. ⁵⁸

(b) For the exploitation of indigenous trees, the area to be exploited is delineated on a map. A licensee is supposed not to go beyond such limits. In practice this limit is exceeded either intentionally or in good faith. Whether such conduct of going beyond what is prescribed is accidental or intentional, the result can be disastrous. It can upset the whole exploitation plan, if any, and it may also mean exploitation of protective forests which should on no account be destroyed. A provision that a licensee must physically demarcate his area of operation as a condition of utilization would not be far-fetched.

(7)(a) Logging is not objectionable per se. When carried out carefully, it is an inevitable utilization practice. It usually involves a choice of either clearfelling or selection cutting. Each of these approaches has

advantages and disadvantages.⁵⁹ It also involves a decision of when to cut trees. The choice of the method to use and age at which to harvest trees are at professional discretion. A provision stipulating for example the minimum age of trees for various uses and where for example clear felling may not be practised would be in the interest of good forestry.

(b) The Forest Act empowers the Minister to make regulations on logging but apart from a condition in the licence that a licensee may not cause soil erosion, the activities of licensees are controlled mainly from the utilization point of view with little regard for environmental problems. Supervision of licensees is usually to see that large stumps are not left and that minimum top diameter conforms with licence. Never is the issue of soil erosion or water pollution⁶⁰ raised. Similarly some logging machinery would cause more environmental damage than others and a stipulation of what may not be used under different forest areas would be appropriate.

(c) The Forest Act is silent on the amenity zone that should be left along public highways, and logging in some areas adjacent to roads has been inaeesthetic. A buffer zone of riparian vegetation should in cases be stipulated for it is such zone that would shade water and trap the suspended sediment, and the intact forest biomass would generally minimise soil erosion on river banks.⁶¹ By prescribing that the minimum width of protective stream buffer should be determined, taking into account topography, susceptibility to soil erosion, height and density of ambient vegetation the law would contribute to maintaining water quality.

(d) Logging is also inevitably associated with skidding and the law is silent on the maximum distance logs may be skidded and on whether they should be skidded downhill or uphill. In the absence of such guidance, a

licensee heavily influenced by logging costs makes use of gravity and a central landing point is usually situated lower down. Where there is a stream such a landing site is hence very close to such stream. Skidding involves dragging logs on the forest floor and the gouging action creates an incision which channels water. If skidding is uphill, fan-shaped distribution of skid trails would disperse water downhill rather than concentrating it into an erosion agent as is usually the case of downhill skidding.

(8)(a) The road system in logging areas especially for removal of logs has been known to be a major contributing factor to soil erosion and subsequent stream sedimentation.⁶² A licence to utilize forest resources implies authorization to construct logging roads and this is encouraged by the Forest Department. The result is that a licensee constructs roads to extract his raw materials without consideration of the environmental impact. In fact his consideration is cost and provided his trucks can use the road in question, he will build the road. Each road should be subject to a licence, distinct from the overall utilization licence. Before such licence is issued, a licensee should submit a plan of the road layout with an environmental impact statement. Failure to make maximum use of contours to avoid steep gradient and unnecessary cuts and fills should be a ground to refuse construction of such roads. An Officer authorizing such road should be required to certify that he has walked along the proposed site and that, it is the best route under the circumstances.

(b) Even where the Forest Department has been building forest roads, the main consideration in the layout of roads is whether logging trucks can go up a particular gradient when loaded. If the answer is yes, such road is constructed. Some roads have steep gradients, big cuts and fills with

the result that during downpour of rain, they become watercourses, taking tons of loose soil down to the streams. Deep cuts expose loose soil beyond the bonds of root biomass and such soils are easily washed away. The Department itself gives insufficient attention to environment, and a stipulation that an environmental impact statement should be filed by the Department would possibly mean more ground work before a road is constructed.

(c) In the other parts of the country, road construction has undoubtedly contributed to soil erosion. A stipulation in the Roads Authority Act, Cap. 401 that before siting a road, alternative routes which do not adversely affect water-catchments shall be examined, would minimise the harmful effects associated with planning such roads mainly on the basis of economy. Land restoration along new roads should also include afforestation as recommended by the Forest Department. The Act is silent on this issue.

(9) The mining of forest areas for various minerals may also be very destructive. The Forest Act does not refer to mining. The fact that the forest areas are under the same Minister who is also in charge of mining should not be an excuse for the Forest Act to be silent on an activity which can drastically alter forest use. Mining of, for example, murram, sand or any other mineral involves stripping off the surface cover with all the top soil either by digging or by the use of earth-moving equipment.

Section 7 of the Mining Act outlines the areas that can be excluded from mining. Water catchments are not among the areas that can be excluded, which is not surprising since even the Forest Act does not recognize the water catchments. While section 14 of the Mining Act concedes

prospecting to be subject to any forest law, there is really no law on mining in the Forest Act and all that would happen in practice is that any such mining may be subject to conditions at the whim of the forest officer concerned. The Forest Act among any other details should contain provision for surface restoration. The restoration and reclamation should be done as much as is practical.⁶³ Miners should be asked to deposit a bond refundable after satisfactory restoration of the surface. Route of access and the type of vehicles to be used should be specified as part of plans for the proposed activity. Failure to submit such a report with other essential details of environmental impact would be a breach of regulations and might lead to refusal to get material from the forest area.

For mining in protective forests a special report on alternatives should be submitted before any authorization. Section 32 of the Mining Act stipulates that the Licensee may cut any tree for his use in connection with mining. A provision in the Forest Act that such trees shall be subject to special permit would stop or prevent indiscriminate cutting. In county council forests, clearance with the Forest Department as a condition of mining would be in the interest of forests and environment as a whole if such provision were included in the Trust Land Act.

(10(a) On royalties and fees, section 15(1)(a)(viii) of the Forest Act empowers the Minister to prescribe royalty. The Forests (General) Rules 1969, made under the authority of the section, are not applicable to the sale of forest produce by tender, public auction or in respect of private treaty where a high price would be obtained. It seems that specific rules should be made in the event of selling forest produce in any manner other than the

one outlined in the Forests (General) Rules. The rules essentially stipulate a fixed royalty for each species throughout the country. The problem with this method is that it essentially regards timber as being like mineral deposits, and the same rough and ready method of royalty determination has persisted up to this period. In fact the royalty of timber has been so low that an afforestation programme could not qualify for the World Bank loan without the drastic change which was introduced about seven years ago.⁶⁴

(b) Admittedly, the several methods of royalty determination⁶⁵ are fraught with problems associated with accounting and analysing various components which should be considered. An efficient royalty determination method should take account of market value at any time which will anyway be dictated by external factors. A fixed royalty does not adjust to changes in demand. A reasonable compromise in the case of plantations near the centres of demand would be to fix a reserve price and then call for tenders. The introduction of tendering would automatically mean a change in the measuring system. Trees would have to be measured standing. Considering the time-consuming problems of measuring individual logs, there need be no regrets if in some cases this arduous method is replaced with a quick and equally reliable method.⁶⁶

(c) In other cases it would be necessary after having determined a reserve price, to auction forest produce either standing or as logs. In the case of felled timber, the reserve price would include logging costs, while for standing timber both the tender and the auction reserve price would be in effect the present royalty. In this respect, it would be necessary for the Forest Act to stipulate that a forest officer may auction forest produce without the necessity of obtaining an auctioneering licence as demanded by the Auction Act. The auction procedure would also be ideal for the recovered forest produce in case of theft.

(d) Such a procedure of selling forest produce by tender and auction besides resulting in higher revenue, would give a sense of fairness to various competitors. As it is, it is really the discretion of the Department to decide who will get the raw material. Possibly for maintaining confidence in the wood industry, the long-term licensees would continue getting material at a fixed price but for any extra material now normally offered to short-term licensees on the basis of availability, fair competition should be introduced. Material in remote parts of the country might be utilized more and there are some cases where efficiency of conversion would occur in the face of free competition of raw material. Forestry is a long-term enterprise and it is reasonable that after waiting for about thirty years, one should get a fair price for timber.

(ii)(a) When trees are destroyed because of a public project such as sewer, waterpipes, surveying,⁶⁷ electric supply or any other form of development, a question of compensation arises. It is also surprising because the Forest Act, which is supposed to give guidance on what should be paid, is silent on this issue. In the absence of any guidance people tend to think of the value of the timber that is contained in such destroyed tree. The fallacy of this is that it is not only the value of timber that matters, but other factors such as rarity of species, location, its health, formation either in groups or singly, and aesthetic value.⁶⁸ This is especially important everywhere where trees have the functional value of for example, a windbreak besides the timber and firewood value. The Forest Act should certainly contain these provisions with a range of monetary values that may be assigned to trees under major circumstances and indicate a procedure for valuing the lost trees.

The unfortunate effect of current law is that before compensation the question asked is: Did someone plant the tree in question? If the answer is yes, then he can qualify for damages which should not exceed the market

value of the standing trees,⁶⁹ under section 90 of the Government Land Act. If the answer to the question is no, one would have a hard time in showing that one has suffered damages. In fact, the Penal Code also envisages a fine only in respect of damage to planted trees.

(b) The question of compensation raises the issue of valuation of the trees destroyed or to be included in any transaction. It is fair to generalize that laymen are unlikely to make a true and fair assessment when it comes to valuation. A general valuer would tend to look at the tree only from the point of view of its timber value or the cost of establishment in the case of a planted tree. It would be in order if the Forest Act stipulated that valuation of trees shall be done by qualified forest officers. Section 29 of the Trusts of Land Act, Cap. 290 stipulates apportionment of timber money between the capital and income. Any cutting scheme should be supervised by a forest officer and valuation should be made only after the hearing of expert opinion.

5. ROLE OF FOREST OFFICERS

(1) It has been mentioned that currently the Forest Act does not make provision for an advisory body to the Minister.⁷⁰ He is advised solely by the Forest Department on forestry matters. It is a fact that the forestry professional has generally tended to be biased in favour of the industrial interest of forest resources and to divorce this propensity from the advice the Department gives to the Minister would be an exception rather than the rule. To reconcile the public interest, which is usually in the indirect benefits⁷¹ of forests, with the industrial interest,⁷² provision for a properly constituted advisory committee would be appropriate in the Forest Act. One of the unfortunate amendments to the Forest Act was to delete provision for an advisory committee from the earlier legislation.⁷³ The

composition of the committee as previously stipulated would not anyway have served the public interest well. The Committee was essentially composed to serve the interest of industrialists in complete disregard of the preservation, protection and improvement of the environment. The committee hereby envisaged should include environmentalists and industrialists with the Chief Conservator as an ex-officio member. Such an advisory committee representing various interests would be able to present the Minister with recommendations based on thorough discussion, enabling him to make a balanced decision without undue influence from one interest group.

(2)(i) A glaring example of an industrial influence either through such previous advisory committee or otherwise is to be seen in the forest officer's role in the quality control of timber, pursuant to the Timber Act, Cap. 386. Firstly one wonders why the Act omits wood carving from the application of its rules. Wood carving is an industry essentially export oriented. Procurement of raw materials also means selecting precious, rare and quite often difficult-to-establish species. For an Act to leave out such an industry, is to ignore an issue which has great impact on forest management and the export market. Listing of the species that may not be used for wood carving and statutory provision for the grading of wood carvings, if incorporated in the Timber Act, would be a fair compromise between the interests of environment and business.

(ii) The Act empowers the Chief Conservator to appoint graders and does not stipulate the minimum qualifications, ostensibly not to disappoint sawmillers who would like to see their employees appointed graders. Instead of relying solely on the Chief Conservator's power to revoke appointment for incompetence, the Act should stipulate the minimum qualifications of a grader for the sake of efficiency. Related to the appointment of a

grader are the powers he is given to grade any timber. There is an implied authority for a sawmiller to grade his own timber and a danger of collusion where one sawmiller grades for another. This is a typical case where commodity interest offends against the principle that no one should be a judge of his own cause. In the exercise of his duty, he is bound to be biased because of his pecuniary interest. In other cases the grader is an employee of timber merchant and is bound to be influenced by the views of his employer. Disregard for this rule of natural justice means possibly marketing timber of quality different from that which it purports to be. The Act should clearly say that no one should grade timber in which he has an interest. Recourse to an independent grader who is paid for the job or to a civil servant would be preferable to the appointment of a grader from among employer or employees.

(3) The purpose of timber grading is to ensure that the timber in question conforms to the desired grades. Objective decisions by a grader could therefore mean the rejection of the timber that otherwise would be valuable, especially in the export market. Downgrading of timber can thus mean considerable losses, and controversy is likely to result. Naturally, no such controversy occurs in the present process of grading as the owners of timber are not likely to do anything which is adverse to their business. A provision in the same Act which says that the decision of Minister in any controversy is final, does not meet with objection from anybody.⁷⁴ With a proper grading procedure, the Act should not by-pass court appeal, because the Minister is himself an interested party where timber comes from state forests.

When the Act is read as a whole, the bias towards timber merchants is evidenced by facts such as that for local sale one does not need to grade the timber. Grading is only mandatory in case of the export market. There i

also no restriction on the moisture content⁷⁵ of timber before it is sold, an issue which, though essential in the timber, is omitted by the Timber Act and other legislation. Mandatory grading of timber for all markets would be a compliance of public policy.⁷⁶

(4) Policing:

In everyday policing, the Forest Department makes extensive use of forest guards. Only a few of these are armed. In view of the unique work they do and to make them more effective, the Forest Act should make special provisions for the forest guards especially in arming them and requiring a discipline similar to that of uniformed service. The forest areas to be policed are far and scattered. A special investigation unit within the Department with special powers of arrest without warrant where forest offences are committed would greatly supplement the work of the under-staffed forest guards. At the moment, section 11 of the Forest Act empowers various officers to arrest and search anyone suspected of having committed a forest offence. Any arrest and search requires a warrant from the court unless there is a specific authorization to search or arrest without a warrant. The section does not mention warrant and by implication it means any of these officers need a warrant from court before exercising their power of arrest and search. Provision should be made for arrest without warrant to make the issue clear. Unlawful arrest or search could backfire and any uncertainty in the exercise of power would tend to deter such an officer from complying with the intention of the section.

(5)(a) However, a culprit is arrested, he is either taken to court or to a forest officer with power to compound offences.⁷⁷ In forest areas compounding of offences is the order of the day. The compounding of

offences is a necessary evil to be watched with misgivings. The transaction is only between two people; the suspect and the forest officer. The procedure is certainly open to abuse and should be done only where the alternative course of action is too expensive and will result in delay. For some degree of safeguard, another Department employee or a local resident should attest such settlement. The popularity of the procedure evident from the large number of cases dealt with,⁷⁸ and a general lack of subsequent complaints on amount of compensation leaves lingering doubts as to whether justice is properly administered.

(b) Section 10 of the Forest Act does not specify the seniority of forest officers in compounding offences. Senior officers should be able to ask higher compensation than the junior officers. As it is the Chief Conservator has no more power than a grade three forester provided both are empowered to compound offences.

(6) **Disciplinary Proceedings:**

(a) If there is alleged misconduct by a forest officer, the usual practice is for the immediate superior to issue a charge sheet to the junior officer suspected of the breach of discipline. The charged officer is asked to exculpate himself, usually within fourteen days. In fact, when an officer decides to serve a charge sheet to his junior officer, he has already made up his mind that the officer being charged is in fact guilty unless he proves himself innocent. This is contrary to the principle that one is innocent until proved guilty. If one fails to reply to the charge sheet to an officer charging, such silence signifies that the junior officer has pleaded guilty.

As if this presumption of guilt is not enough, the immediate superior who initiated the charge sheet is in practice required to recommend

the punishment that should be awarded to the culprit. The charge sheet is then forwarded to the Permanent Secretary through the hierarchy of the Department. Each senior officer is supposed to comment and the usual practice is to endorse because in any case such charge sheet does not contain enough evidence on which to arrive at unbiased decision.

(b) In fact this practice whereby the person who charges is the same that recommends the disciplinary measure that should be taken is contrary to the spirit of the Public Service Commission Regulations.⁷⁹ Somehow, through usage, it has become the standard procedure. Administratively charge sheets without such unequivocal recommendation are referred back to the source.

(c) The other common feature associated with exculpation is that the officer trying to exculpate himself may incriminate the officer charging him with misconduct completely unrelated to the content of the charge sheet. On such inadmissible evidence, the Department has occasionally inflicted ultra vires punishment on the incriminated officer. Depending on the seriousness of the issue raised in self defence, whether irrelevant or pertinent, the original issue of the charge sheet may be eclipsed, a consequence which is in favour of the officer charged.

Any appeal in connection with disciplinary proceedings lies with the Public Service Commission whose decision is privileged.⁸⁰ For a breach of discipline which if proved would result to dismissal, there is a disciplinary procedure whereby the officer charged can rebut evidence against him as well as cross examining any witness. For other less serious misconduct, the Department is content with lesser justice.⁸¹

(7) Punishment and Orders:

(a) The main feature of the penalty available for any kind of forest offence is that it is very light. The penalty has not changed since 1911 legislation. Without differentiating the seriousness of the various offences, the Act stipulates that the maximum penalty for any offence is six months imprisonment or a fine of three thousand shillings.⁸² Stipulating the minimum penalty would be resented by the judiciary as a fettering of their discretion. A stipulation of higher maximum penalty, depending on the gravity of the offence committed would indicate the seriousness of the issue. For example, illegal squatters who build permanent houses in the forest area and try to gain ownership by adverse possession should be viewed very differently from someone who grazes in some open glades in forest without permission. There are other major offences such as intentional burning of indigenous forests to which the Forest Act does not give special attention.

(b) Although the Act stipulates that any property used in the commission of forest offences may be seized and detained,⁸³ it does not clearly mandate forfeiture of the property thus detained should the person suspected of offence be eventually ^{proved} guilty. In practice there is restitution of property. For major offences such as illegal squatters in forest areas, forfeiture offence should be stipulated. If stolen forest produce is mixed with genuinely acquired property, the whole consignment should be forfeited.

(c) The court may order the award of up to half the amount of the fine to anyone who provides information leading to conviction. The award is limited to non-civil servants.⁸⁴ It should be extended to subordinated staff for the sake of cooperation in policing the forest areas. If the provision is properly administered, it should be useful in preventing of forest fires.

FOOTNOTES

1. For the account of this chapter the writer is influenced by a number of legal periodicals on environmental issues particularly those under the heading of Forests in Index to Legal Periodicals. The articles analyse, interpret and criticise particular aspects of forestry practice. The most influential authors have been put under the reference. A number of relatively developed forest laws in other countries have also been of some aid.
2. Unalienated government land in Forest Act excludes land dedicated for public use such as roads.
3. Forest areas less than three per cent of the country area.
4. Troup, R.S. (1939). Colonial forest administration. p.273.
5. Comparatively, Nigeria Forest Act exhaustively deals with determination of rights.
6. Purposes for compulsory acquisition of land are defence, public safety, public order, public morality, public health, town and country planning or the development or utilization of any property in such manner as to promote the public benefit.
7. Section 4(2) stipulates twenty eight days notice in government gazette.
8. New Zealand Forest Act, Cap. 19 stipulates alteration of forest land to be done only by Parliament. s. 19.
9. Due to conflicting interests discretion on use of forest areas should be narrowed to avoid generality, vagueness and ambiguities. Miller, W. R. Jr., (1974). Judicial control of forest service discretion under the multiple-use act.
10. Olindo, P.M., (1974). Protection problem - mammals and birds, p.2. Also Dasmann, R.F. et al (1973). Ecological principles for economic development, p. 17.
11. Foote, J.P. (1973). Wilderness, a question of purity, p.256.
12. Wolcott, E.S. 111(1973). Parker v. United States. The Forest service role in wilderness preservation. p. 164.
13. Reservation done on straight lines from hill to hill in the absence of detailed maps. Efforts were made afterwards to adjust the boundary to follow natural features where practical.
14. The Act is applicable to Trust Land which may have forests and in other cases such land is adjacent to gazetted forest areas.
15. Section 6 of the Forest Act.
16. Section 2(4) *supra*.
17. See footnote 2 *supra*.

18. The meaning should be the one conveyed in Government Land Act. Cap. 280, section 2 on interpretation.
19. Private forests mean lands held under freehold or leasehold status either by individuals or bodies.
20. Section 48, Agriculture Act and the Agriculture (Basic Land Usage) Rules.
21. It is in nature of their profession to think in terms of food production. Quite often, the forests are obstacles to food production.
22. Rule 2, First Schedule, rules made under sections 32 and 33 of the Government Land Act.
23. Guaranteed minimum return loan advanced for wheat, maize and barley. Section 116 of the Act. Currently five hundred shillings per hectare.
24. Weather changes, burning, fear of future changes such as nationalization make some people hesitate in long term projects which do not start yielding income until some twenty years or so.
25. Financial incentives are provided to private forests dedicated to forestry purposes in U.K., Forestry Act, Cap. 10; Canada (Quebec) Forestry Credit Act allows reduced interest on private forestry, F.A.O. (Dec. 1976) Ed Agric legis. 25(2). p.75; A well worked out scheme of forest taxation has salutary effect on forest management, Hensel, J.S. (1977). Tech. Release. Am Pulwood Ass. vol. 19, 21, 22, 24, 25.
26. Such species such as: muringa, mukri, mbambakofi, munuhu, and some other species for example of medical interest. Preservation of some tree is basic provision of Forest Law. Francois, T. (1961). What should a basic forest law contain.
27. For example Tree Preservation Order made under Town and Country Planning Act, 1962 in U.K. is useful in preserving trees for amenity. The order also makes provision of planting such trees if cut down.
28. If the provision was there the precious Naivasha acacia (fever tree) would not have been destroyed. The damage was irreversible and irreparable for it will take many years to get similar trees of the same species (*Acacia xanthophloea*).
29. Woodman-like manner has been held to mean cutting wood in a way a prudent forester would cut for example in pruning. *Unwin v. Hanson* (1891) 2 QB 115.
30. Section 64(3).
31. This is not total condemnation of fires in forest management. Fire management concept is that fire can contribute to ecosystem. dynamic. Barney, J. (1975), *Fire management*. In fact some species may need fire for proper propagation, Gill, A.M. (1975). *Fire and Australia flora*.
32. Section 7 and 8 of the Grass Fire Act.

33. Section 4 of the Act.
34. In comparison, Australian forest laws are elaborate on fire prevention and requires that industries in forest areas to keep fire fighting equipment in serviceable condition. Victoria State, Forest Act, Cap. 6254; New South Wales, Forest Act Cap. 55; and Western Australia Forest Act Cap. 8.
35. Police Officer, fire ranger and honorary fire ranger.
36. Prohibition only in regard to forest areas.
37. Besides forest officers, police officer, Chief Game warden, Senior Game warden or Game warden may also exercise the same powers.
38. Section 75 of the Kenya Constitution.
39. Section 75(6)(v) of the Constitution.
40. Honey barrel (hives) maybe destroyed when bees stinging is a nuisance either to public or animals. The owner however would be given a chance to remove such barrel before destruction.
41. The fact that the Act includes goats in its definition of cattle and grazing is subject to licence, excluding one form of animal would be anomaly. All the same, Foresters do not like goats. At one stage Australian Law stipulated shooting of stray goats which are difficult to impound. Baden Powell, B.H. (1882). A manual of jurisprudence for Forest Officers.
42. Section 48 of the Act on Land Preservation.
43. Fencing - see protection, chapter 4, note 18.
44. Wheat cultivation in Narok has reduced grazing land both for domestic and wild animals.
45. The writer has been a member of agricultural meetings where the gap between the Ranchers and Game Department Officials has not yet been bridged.
46. Land either registered in the name of many ranchers or land still vested in county council. Individual ownership of livestock while land is owned collectively is a common feature in Africa as noted by Mifsud, F.M. (1967). Customary land law in Africa.
47. Diseases here include insect pests, bacterium, fungi and virus.
48. Many lay people in the country believe most foreign diseases are introduced in course of research. At least whooly aphid started around research station, Muguga.
49. This is a violation of natural justice rule that one should not be a judge in his own cause.
50. Dothistroma and whooly aphid are not local diseases. They are import
51. Production, protective forests, nature reserve, recreation and wildlife.

52. New Zealand Forest Act, Cap. 19 elaborates on working plans which must be complied with in management of forests.
53. "Permit" is used to denote there is no royalty payment in connection with private forests. Other detail may include for example the minimum diameter for trees needing permit to be cut.
54. Section 37 of the Trust Land Act, and the Trust Land (Removal of Forest Produce) Rules.
55. The Forests (Tugen-Kamasia) Rules G.N. 331/1949.
56. The Forests (Nandi) Rules, Cap. 176(1948) sub.leg.
57. "Buzaa" is a local brew made from cereal flour and is quite common in areas of those right-holders. Its preparation requires considerable amount of firewood.
58. The Swedish Forest Law, 1948 goes further by stipulating that marking shall be done at the root and at breastheight; section 27. The provision is for ease of checking that the desired trees only are felled.
59. Clearcutting is appropriate for; shade intolerant species regeneration; lower logging costs, minimizes disease effect. On the other hand, selection cutting is appropriate for maintenance of amenity, less detrimental impact of ecological balance, and maintenance of normal forests, with diversity in species and ages of trees. Bernstein, J.E. et al (1974). Clear cutting: Can you see the forest fortress? p. 108 - 25.
60. Water pollution is said to take place when a discharge into water, either directly by man or man-induced makes water unfit for intended use. Hence man pollutes water when he alters either physical, chemical, biological or radiological integrity of water.
61. Soil erosion and subsequent siltation of streams are recurrent environmental problems associated with logging methods. Lundmark, T. (1975). Regulation of private logging in California. p. 156 -60.
62. Some observation of various logging methods in watershed areas revealed that road construction significantly increases sediment load. Wilson, L.P. (1974). Man's activities in watershed areas. A need for Planning. p. 242.
63. In some countries law requires a miner to restore surface as soon as it is practicable. Elliott, D.H. and Metcalf, L.C. (1976). Closing the mining loophole in the 1964 Wilderness Act. p.481.
64. The main concern is royalty in respect of exotic species such as cypress and pines. The royalty had to be increased gradually.
65. The major methods of royalty determination are:
 - a) Residue value which is selling price of converted timber less all logging and conversion costs.
 - b) Cost of growing timber plus reasonable profits.
 - c) Market value of standing timber which fluctuates with overall economy and the locality of trees. Hanson, A.G. and Leslie, A.J. (1965). The Determination of stampage.

66. It takes 21 per cent of a Forester's time to do measurement of forest produce. See table 5 Chapter 6 on distribution of Foresters' time.
67. The Survey Regulations, made under section 45 of the Survey Act, makes a forest officer as a reconciler in case of compensation for damaged tree. (Section 31(4)(b)). Forest Officer can only go by royalty guide which does not take into account the other values of tree other than timber. Reserved trees should be subject to compensation even though damaged within trigonometrical station. The Survey Regulations, section 31(5) stipulates no compensation.
68. Del Alamo, C. (1975). Calculating compensation for loss of ornamental trees.
69. Trees include shrubs and bushes.
70. See chapter 6 section 1(4).
71. Benefits such as conservation of soil and water, recreation and wildlife.
72. Bias in favour of commodity interest by professional agents incharge of forests is a world-wide phenomena. It is what a number of reputable environmentalists have been trying to fight against. Clark, P. S. (1975). Sierra club v. Dutz; Industry fights back.
73. Legal Notice 236/1964. deleted section 3 Forest Act.
74. Section 5(5) of Timber Act.
75. If wood is not properly dried subsequent shrinkage as moisture content decreases may cause serious defects depending on the use to which wood is put. Furniture industry requires reasonably dry wood.
76. It is public policy to promote various industries in the country.
77. See chapter 6 section 4(5).
78. See table 6 chapter six on cases compounded. In 1977 a total of 1,727 cases were compounded with a total compensation of 99,575.00 shillings.
79. Section 34(7) and 36(9) of the Public Service Regulations.
80. Service Commission Act, Cap. 185, section 7.
81. Generally if one does not prove himself innocent, particularly for junior officers, punishment is inflicted without proving facts.
82. Section 14, Cap. 11 of 1911. Imprisonment of six months or fine of one thousand five hundred ruppes which is equivalent to about three thousand shillings.
83. Section 11(c) and (d) of Forest Act.
84. Section 12 of Forest Act.

CHAPTER EIGHTCONCLUSION

1. From the foregoing it has been demonstrated that forests are extremely important in Kenya because of their direct and the indirect benefits. Optimum realization of these benefits in perpetuity does greatly depend on the legislation applied in forest management. Here the pertinent questions are whether the law on forest management is adequate and whether it does allow some permanence in forest management in order to realise the benefits in perpetuity. Equally relevant is justification of the law to interfere with professional discretion and means to cope up with the extra work occasioned by compliance of new duties imposed by such law.

2. The function of forest legislation is to give effect to forest policy which in essence stipulates that the forests should provide its resources to the public in a sustained and maximum yield. There is no dispute on the end objective of the policy; but whether the ideal goal is attained or approached at least, will depend on the management technique applied under various conditions. An ambitious and imaginative law would be one which prescribes the major practices that must be carried out to realize sustained forest production without impairment of capital, (land). From the previous criticism and proposals, it is evident that forest legislation leaves a great deal to be desired. A more effective forest legislation can be inferred from the criticism and from the proposed changes.

3. One may ask why have forest laws at all instead of leaving most of the issues to the Forest Department decisions? The main issue is that some permanence in forest management is essential. Growing trees takes some generations and a mistake made now may not be remedied for many years to come.

Damages associated with for example a wrong decision to clear a certain indigenous forest are indeed irreversible as far as plant species and soil microorganisms are concerned.¹ A law that creates some permanency in forest planning would minimize the mistakes likely to occur from the decisions which are essentially made on policy and exigence. An adequate law would tend to introduce management by objective as spelled out in policy as opposed to management by reaction to crisis.

4. A forest law that introduces concepts of duty, where none existed before, as well as prescribing the management system that should be followed in relatively more details may be viewed as fettering the decision of the professionals. Since the attainment of policy goals depends on the means used, it is reasonable to curtail the discretion of the professionals where there are several alternatives some of which would be prejudicial to the public interest if chosen. The fact that the forestry profession is inherently biased in favour of timber utilization and that environmental considerations are secondary, tends to justify more elaborate law in forest management, especially where it is a matter of balancing direct and indirect uses of forest areas. A law for example which stipulates the minimum age of a plantation before clearfell and the maximum allowable cut in a period may certainly be welcomed even by the professionals who find it difficult to convince industry not to go beyond these utilization limits. Some members of the public whose interest in forests may be affected by the reform of forest law may resent some of the provisions. Like some Agricultural legislation once hated and now hailed as a catalyst for economic development,² people might come to admire a forest law whose main objective would be to enjoy forest resources in perpetuity, rather than one that lays undue stress on present consumption.

5. A major issue that would be connected with law reform would be increased amount of work for the few staff. The Forest Department has grown from skeleton staff to a fairly large department and there is no reason to believe that it cannot grow further. More staff establishment is justified by extra essential work would be inescapable. As suggested in the description and criticism of forest practice, a change from the present method of measuring felled logs to measuring standing trees for royalty assessment purposes would mean a saving of about 5,670 mandays³ and this could be deployed towards the extra work occasioned by compliance with up-to-date forest legislation. Tied up with the issue of consequential extra work is the question of setting and maintaining reasonable standards in forestry practice. This is a field where professional forestry society could be of some help. Statutory formation of such a body, preferably preceded by a voluntary organization of foresters, would augment the effectiveness of forest legislation especially in the fields of private forestry and valuation.⁴ The law might specify that certain statutory forestry duties must be done to the satisfaction of Forest Department or registered forest officer in accordance with standards set by such a forestry society. Another potential source of labour that should not be under-rated would be the organization of various groups of people in the country to participate occasionally in forestry projects.⁵ In fact it is through such participation that people might become more aware of the role of forestry and consequently assist voluntarily in caring for trees wherever found.

6. Finally, there is the important issue of the enforcement of the envisaged law. This would mainly be carried out by the Forest Department. The success of activities such as expulsion of illegal squatters from forest areas and general policing especially in remote parts of the country has been achieved through the cooperation of the Administration and the Police Depart-

ments. As a matter of fact, these departments have been sympathetic towards the forestry cause. The departments will however take prompt action only if they are certain that a particular treatment of forests is a breach of law. Otherwise, if there is doubt on the legality of interference with some apparent abuse of forests by anyone, the departments will not act, mainly for fear of public complaints which might lead to political problems. This underscores the urgency of the recommended provisions for the sake of clarity and certainty. Also, to make the way still clearer for enforcement, a stipulation to the effect that the forest legislation will prevail in the case of a conflict with another law on all issues concerning trees would be quite appropriate.

7. The views expressed in this study are influenced by ten years of field experience. During the six years as a Conservator, the writer has participated in meetings of local leaders where the shortcomings of the forest legislation have been an issue, especially in relation to water-catchment, private land, and in some cases forest areas. In addition to the literature cited, the writer has sounded the views of local leaders of various major geographical areas and generally it has transpired that the public is in favour of some control of the utilization of trees on private lands. A legal direction and control would to some extent reduce the prodigal exploitation of trees especially on private land.⁶

FOOTNOTES

1. With indigenous forests the rapid recycling of minerals as leaves drop and decompose means there is little loss of minerals. When forests are cleared, leaching literally means loss of minerals. There is also associated problems of laterization of soil when forests are cleared. Dr. J. Burley, personal communication.
2. The Land Consolidation Act, Cap. 283 was extremely unpopular and even recently some government officers have been killed in course of their duty. Better economic utilization of land and possibility of raising money by mortgaging such registered land has been indisputable benefit where the land consolidation has taken place pursuant to the Act. Other essential cash crops such as coffee and tea have been promoted through statutory provisions. Development Orders pursuant to the Agriculture Act, Cap. 318, ss 64 to 109 are undeniably essential. Compulsory soil conservation measures though applied at times improperly during colonial period on the whole had salutary effects.
3. Table 5 shows distribution of a forest officers' time. Since a forest officer is essentially the supervisor in most of forest operations, how he uses his time is critical in effective forest management. A saying that "the eye of a supervisor fertilizes soil" sums up the role of a forester.
4. There has been several efforts to form a forestry society by the Forest Department. Perhaps because of fear of some doubtful qualification by some members in the department, the society is invariably to be open to rank and file. This propensity for survival of bureaucracy makes such society a failure ab initio. The writer has in mind a society of academically qualified people, capable of professional tackling many complex issues of forestry management.
5. There are several voluntary projects commonly known as "harambee projects" where people donate funds and others sacrifice to work without payment. The impact of "harambee" projects has been phenomenal on overall economic development in the country since the independence.
6. Where cutting would mean exceeding allowable cut or destruction of protective forests, other sources of energy such as methane production and effective utilization of sawdust and other waste could be promoted by the Forest Department.

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