TREES AND FARM BOUNDARIES: FARM FORESTRY, LAND TENURE AND REFORM IN KENYA

Peter A. Dewees

THE EXTENT OF TREE-GROWING PRACTICES IN KENYA

Simple observation in many high-potential agricultural areas of Kenya informs the casual observer that protected, cultivated and managed trees have assumed an important place as one of many smallholder land-use options. The observation poses a number of contradictions to conventional views of smallholder agriculture. Population pressures in many areas of Kenya have become extreme, but it is in precisely these areas, where pressures on agricultural land are greatest, that the area of land used for growing trees (rather than for other crops or land uses) can be quite substantial. The rural afforestation efforts of government, aid agencies and local organisations in Kenya have seldom taken account of the extent of existing tree-growing activities. Even when they have, the assumption is usually that tree planting on farms is a recent outcome of externally developed initiatives. There is little thought given to the possibility that farmers could have undertaken these initiatives on their own, independently of any external assistance. We seek to show in this article that a number of tree-planting practices, particularly the planting of trees on field boundaries, antedate contemporary ‘social forestry’ interventions, and indeed, antedate colonial settlement. We seek further to explore the origins of these practices as they were related to customary land tenure.

Important gains in improving our understanding about the role of trees in high-potential agricultural areas of Kenya have been made over the last several years as a result of the collection of land-use data which reflect the extent of tree protection, cultivation and management practices (Table 1).

In Murang’a, Kisii and Kakamega Districts (which are characteristically areas with high population densities and heavy intensities of agricultural land use), wood lots, hedges and windrows—planted and managed trees and shrubs—cover an average of 7-4 per cent of the area of agricultural land. Over 20 per cent of the total land area has been used for growing trees, or has otherwise been left under natural woody biomass.

Other evidence suggests that there is a gradual transition in the type of woody biomass which predominates as population pressures increase (Bradley, 1991). Natural forest and bushland are cleared as agricultural development is intensified, but replanting follows, apparently using trees which are much more productive than the forest and bush they replaced.

Some tree-growing practices are closely related to the presence of both rural and urban markets for tree-based goods and to heavy household demand for those goods. For instance, wood lots of eucalyptus (Eucalyptus saligna and E. grandis) are sometimes planted in response to growing demand for construction poles. Black wattle wood lots (Acacia mearnsii) are common in areas where there are markets for wattle bark for the tanning extract industry, and for charcoal and fuelwood. Cypress (Cupressus lusitanica) is often grown by smallholders and harvested by pitsawyers for sawn timber.
TABLE 1. Agricultural land area covered with trees and other woody biomass in Kakamega, Kisii and Murang’a Districts of Kenya

<table>
<thead>
<tr>
<th>Type of land use</th>
<th>Kakamega</th>
<th>Kisii</th>
<th>Murang’a</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Area</td>
<td>%</td>
<td>Area</td>
</tr>
<tr>
<td>Hedges</td>
<td>59.7</td>
<td>2.2</td>
<td>118.8</td>
</tr>
<tr>
<td>Wood lots</td>
<td>70.3</td>
<td>2.8</td>
<td>76.6</td>
</tr>
<tr>
<td>Windrows</td>
<td>33.6</td>
<td>1.3</td>
<td>12.8</td>
</tr>
<tr>
<td>Bush</td>
<td>181.4</td>
<td>7.1</td>
<td>90.6</td>
</tr>
<tr>
<td>Riparian woodland</td>
<td>90.4</td>
<td>3.5</td>
<td>30.1</td>
</tr>
<tr>
<td>Trees on cropland</td>
<td>33.8</td>
<td>1.3</td>
<td>22.6</td>
</tr>
<tr>
<td>Trees on grassland</td>
<td>17.6</td>
<td>0.7</td>
<td>3.1</td>
</tr>
<tr>
<td>Trees around the house</td>
<td>22.2</td>
<td>0.9</td>
<td>4.3</td>
</tr>
<tr>
<td>Trees along paths</td>
<td>4.7</td>
<td>0.2</td>
<td>2.2</td>
</tr>
<tr>
<td>Trees in bush/open woodland</td>
<td>43.2</td>
<td>1.7</td>
<td>24.8</td>
</tr>
<tr>
<td>Total woody biomass area</td>
<td>556.9</td>
<td>21.9</td>
<td>385.9</td>
</tr>
<tr>
<td>Total agricultural land area</td>
<td>2,548</td>
<td></td>
<td>1,925</td>
</tr>
<tr>
<td>(1979 population density)</td>
<td>294</td>
<td></td>
<td>395</td>
</tr>
</tbody>
</table>

Source. Derived from data collected by Ecosystems Ltd (Kenya) for the Kenya Woodfuel Development Programme of the Beijer Institute which were made available for further analysis.

These types of subsistence and market demand for a range of tree products have provided important incentives which have encouraged farmers to grow trees.

There is an interesting and growing literature on rural forestry in Kenya. While much of it relates to the fact that people use and need products from trees (see, for instance, Brokensha et al., 1983, and Riley and Brokensha, 1988), little has actually been written about why people plant trees, either from an economic or from a socio-cultural perspective.² There is often a view conveyed that trees in agricultural areas of Kenya are somehow residual, and were protected when fields were first cleared in order to maintain future supplies of tree-based products (see, for instance, Castro, 1991a,b). While indeed such is the case in many areas, the vast majority of trees found in high-potential farming areas are of exotic species and have been cultivated or have been otherwise planted and managed.

Again, we return to the question of why it is so. In addition to the potential for income generation, recent studies have shown that more extensive tree-planting practices (such as in wood lots) are more likely to be adopted as households age, as family labour becomes scarce, and as there are fewer needs for income from more capital- and labour-intensive cash crops. Tree planting is seen as one means of keeping land under a productive fallow crop (Dewees, 1993).
The rationale for other tree-growing practices is not so clearly related to the potential for income generation or for alleviating household labour constraints, or to other household resource allocation strategies. The planting of trees on farm boundaries, for instance, yields few immediate financial or economic benefits. Although not accounting for a large gross area, boundary planting is extremely common in most agricultural areas. Economic benefits to the household from these kinds of planting are sometimes important in terms of fodder and fuel production but, for the most part, are minor. Consequently, the adoption of these types of practice cannot be understood solely in terms of their immediate or potential financial or economic benefit to the household.

This article examines the rationale for the planting of trees on land-holding boundaries in Kikuyu areas of Kenya. It is maintained that these practices are nothing new and are seldom an outcome of recent project-oriented tree-planting interventions, but are rather the result of tree-planting practices of long standing which are closely linked to customary (as well as to more recent) land tenure practices.

**TREES AND CUSTOMARY LAND TENURE PRACTICES**

There is a considerable body of archival and historical evidence to suggest that land tenure processes in Kenya were intimately associated with customary tree cultivation and management practices long before colonial settlement. It is less easy to identify exactly when these practices took hold, though they were well enough advanced during the earliest periods of colonial settlement for a number of observers to have commented on them (particularly Routledge and Routledge, 1910).  

Some of the practices were undertaken as explicit initiatives with clear production objectives. In other circumstances the objective was to provide protection from marauding wildlife and from raids by neighbouring tribes. Trees also played a vital role in religious practice and were an abundant source of medicines and foods.

**Land tenure and tree tenure**

Customary law in many areas of Kenya generally recognised a distinction between rights of control of land (which are usually held by a local political or lineage authority) and rights of use and access to it (often determined by the needs of individual members of a community). Because of this distinction, rights of private land ownership by a single individual—implying the ownership of the land and everything on it—were not generally a feature of customary law. Within this context, then, tree tenure and land tenure issues had to be regarded separately. The right to use trees could belong to the individual or could be assigned to an individual by the community through its spokesman. Especially in this last respect, social persuasion and discretion played important roles in defining patterns of natural resource use and management.

Particularly as a result of the extensive land reforms which took place in many parts of Kenya from the early 1960s, customary systems of land tenure have evolved into a system derived from English property law and characterised by administratively private tenure, but incorporating community
trust obligations inherent in customary law (Okoth-Ogendo, 1987). Indeed, one of the main objectives of land tenure reform between 1955 and 1965 was to confer private tenure on Africans. But even after the lengthy process of land consolidation and registration (which took place in Kikuyu areas in the early 1960s) there were strong indications that customary laws regarding inheritance and succession were continuing to determine patterns of land control and use (Homan, 1963).

Over time the distinction between land tenure and tree tenure has been increasingly obscured. In English law, trees are considered part of the land; the control of things on the land cannot be vested in someone other than the landowner. This was at variance with the customary view that rights of use and access to trees could be distinct from rights of control. The outcome, for the most part, has been that, in areas which are characterised by private tenure, rights of control over trees which were vested in lineage authorities under customary law have nearly disappeared.

*Customary systems of land tenure.* In Kikuyu areas sub-clan boundaries, and subsequent political and economic divisions, were largely a function of the physical geography. Much Kikuyu land is characterised by a series of ridges (rūgongo) and deep river gorges running from west to east. The earliest Kikuyu settlers in this area migrated from the east, and migration tended to follow these natural pathways along the ridges. They were vitally important in providing much of the basis of political and social organisation among the Kikuyu, as they strongly influenced patterns of settlement and the emergence of systems of land tenure. Ridges, for the most part, tended to be cleared and cultivated first, and became the basis of the holdings of a sub-clan or lineage (mbari) which could trace its origins to a common male ancestor (Muriuki, 1974).

Acquisition of land in the areas of earliest Kikuyu settlement was based on the rights of first use, defined by the exercise of hunting and trapping (mūtego) rights. The system which evolved was described by a Kikuyu elder in the late 1920s:

In those days we did not cultivate so much as we do now. A man trapped animals and his hunting area became his Ngundu [land claim]. His descendants became his clan. Each father had his own hunting area where he set his traps and he would show the boundaries of it to his sons... In the course of time by a natural process the Estate breaks up and each branch of the family gets control of its own Estate, but they always still recognize the eldest son of the eldest branch as the head of the family. [Kenya, 1929]

Where hunting was carried on in conjunction with settled agriculture these rights were strengthened by forest clearance and by cultivation. The basic land unit was known as the githaka (estate). Technically, as it refers to uncleared bushland, its basis is in hunting, rather than in cultivating, traditions.

A githaka claim formed the basis of the sub-clan’s lineage rights, which were derived from those acquired by the first githaka owner, which in turn were based on those rights acquired by first use. Rights acquired by purchase were recognised only in a few limited areas such as in Kiambu. Rights of use...
and ownership were distributed to male descendants of the first owner, while a non-distributed right of control was held by the eldest son of the senior branch of the sub-clan or family who was its trustee (or mūramati).

Disputes concerning decisions taken by the mūramati were resolved by a council of mbari elders. Over time, particularly as githaka were divided and subdivided by the inheriting families (subject to the decisions of their own mūramati), the control of sub-clan elders over land use declined. By the late 1920s githaka ranged in size from about 20 ha to nearly 2,500 ha, although they were generally between 80 ha and 120 ha in size (Kenya, 1929).

Cultivation rights within the githaka belonged to families with lineage rights, and with few exceptions were held in perpetuity. Temporary cultivation rights to mbari lands could be acquired through land lending, tenancy or redeemable sales arrangements. A múhoi (pl. ahoi), for instance, could be lent land for cultivation, usually on the basis of friendship (but subject to the approval of the mūramati). In certain circumstances the rights of a múhoi could be passed from generation to generation. The cultivation of the githaka was the clearest means of maintaining land tenure rights. In the event of lineage rightholders being unable to cultivate the githaka fully, ahoi would be sought to clear and cultivate under-utilised land. As land became more scarce during the colonial period, and as labour became more abundant, ahoi arrangements became less common and were widely cancelled.

Land lending through arrangements with ahoi was different from tenancy. Occasionally a múhoi might become a resident tenant (mithami) who would be allowed the right to build a homestead (a right which was normally denied to ahoi).

Land lending through the ahoi system encouraged the formation of a class of non-resident farm labourers. It was dependent in part on there being widely fragmented holdings which could not be successfully cultivated by the sub-clan right holder. Tenancy and land lending arrangements could be inherited. Rights of use were inherited by the male lineage while rights of control were retained by senior male members of the sub-clan. The wholesale cancellation of land lending and tenancy arrangements (a process already well under way by the 1940s) which accompanied land reforms in the early 1960s did much to exacerbate the problems of the landless among the Kikuyu.1

A third land use arrangement relied on the redeemable sale of land to a mūguri. Sales could be redeemable when the seller had the option of rendering the transaction reversible. Redeemable sales were usually undertaken to generate bridewealth (Simmance, 1961).10 In the mid-1950s it was estimated that between 10 per cent and 50 per cent of the total land in Murang'a District11 was technically under some sort of land lending, tenancy or redeemable sale arrangement which could be cancelled.12

Tree tenure. As with other features of the githaka system of land tenure, rights of use to naturally growing trees on a right holder’s plot belonged to him and to his household. Rights of access to and the use of these trees could be granted by the right holder to others. Rights of access to trees on unallocated portions of the githaka belonged to the mbari. Permission to
fell the trees had to be obtained from the *mūramati*, but as long as unallo- 
cated bushland remained there were few supply problems.

In Murang’a and Nyeri Districts tenants or farmers who had obtained 
land through a redeemable sale or land lending agreement had no right to 
cut down the trees on the plot. Trees were actually inventoried at the time 
tenancy arrangements were made, and the cutting of trees without payment 
or permission was an offence for which fines were assessed and compensation 
was paid. *Planted* trees belonged to whomever planted them, as long as they 
held some sort of cultivation right by lineage, by redeemable sale or by 
tenancy. A number of trees were especially recognised for their rapid regen-
erative capacity and were planted as timber species. These included *mūū* 
(*Markhamia hildebrandtii*) and *mākukhu* (*Macaranga kilimandscharica*). 

These species were also profuse coppicers. Like planted trees, coppiced 
production belonged to whomever held cultivation rights. Coppiced trees 
would be allowed to grow on cultivated land, as well as in hedges and wind-
rows. The Routledges, among the earliest of the social scientists to carry out 
ethnographic studies of the Kikuyu in Nyeri, reported that they commonly 
observed coppiced stems up to 20 ft in height on farmland (Routledge and 
Routledge, 1910).

*Trees as boundary markers*

*Demarcation of the gīthaka boundary.* Trees were commonly used to 
demarcate the boundaries of *mbari* lands and were preferred over other 
means of boundary demarcation because they provided greater visibility. 
As population pressures increased in Kikuyu areas, tree planting around 
boundaries became the accepted practice.

Prior to the use of trees as boundary markers, however, the customary 
means of marking out *gīthaka* boundaries was with a flowering plant called 
the *gītoka* lily (pl. *ītoka; Crinum kirkii*). *Itoka* were planted by the hereditary 
*gīthaka* right holder or by representatives of the *mbari* who held lineage rights 
to it. Leakey (1977) and others refer to the marking out of boundaries with 
*ītoka* as a result of land transactions in Kiambu, and it was a feature of 
boundary demarcation in other parts of Kikuyu country as well.

*Gīthaka* boundaries were usually marked out as land clearance and culti-
vation became widespread. Marking was often an outcome of disputes 
over the boundaries of sub-clan land but was also undertaken simply as a 
means of preventing future disputes. It was to be done in the presence of 
witnesses and of the representatives of the *mbari* which owned the land 
adjacent to the plot in question. There was little fear that a person would 
willfully destroy boundary plants, as the Kikuyu believed that such a person 
would die almost immediately (Leakey, 1977).

While *ītoka* was the accepted boundary marker, several species of trees and 
bushes were accepted as substitutes. The planting of trees became consider-
ably more common as the need for clearer boundaries to *mbari* land became 
evident. Trees were planted at irregular intervals, as well as in windrows and 
hedges. The process was apparently well under way by the time of European 
settlement. The Routledges wrote about *gīthaka* land in 1910: ‘The boundary 
of the estate . . . was indicated by the planting of trees in line [and] by regular
hedges... The countryside presents the appearance of large allotments or of small fields divided by hedges' (Routledge and Routledge, 1910).

Trees which could be used as boundary markers included múgumo (Ficus natalensis), mwaθa (Synadenium compactum), múiri (Prunus africanaum), múkawa (Carissa edulis) and múrīnga (Cordia africana) (Leakey, 1977). All these trees had particular and distinctive features. Múgumo, for instance, is a widely recognised and fast-growing tree with magical qualities, and sites where it had been planted were often used for ceremonial purposes. Múgumo was never allowed to regenerate naturally. If a seedling of this species was found to be germinating naturally somewhere it was uprooted. The only trees which were allowed to grow to maturity were those which had been specifically planted. Múgumo trees, then, always indicated something of importance such as a githaka boundary or a ceremonial site.

Other boundary trees were of less importance for customary and ritual purposes, but still retained distinctive characteristics. Mwatha is recognised for its red leaves and latex. Its wood has utility value, and the latex reportedly has medicinal qualities. Műiri is a tall tree, also with numerous medicinal properties, and with extremely hard timber which was used for mortars, pestles and farm implements. Mûkawa is a thorny species which can form a dense hedge and bears edible fruit. Mûrînga is a tall timber tree, occasionally covered with white flowers, which is valued for shade, for timber and for its medicinal properties. All these trees were useful as boundary markers because they could be easily recognised, because they were easily propagated (usually from cuttings) and because they had some utility or medicinal value.

S. H. Fazan, the District Commissioner of Kiambu in the early 1930s, noted that in some instances the boundary of the githaka would be marked by coppiced and pollarded tree stumps rather than by planted trees, '... that is to say they cut off the tree itself and leave the bushy growth to spring from the root. I saw several of these, and in one place they have the general appearance of having been planted in a row.'

The Forest Department, wittingly or not, adopted the practice of boundary demarcation with trees when it first began closing off the forests to further settlement between 1910 and 1920. It was a practice common among those trained as foresters for the colonial service and was certainly not unique to Kenya. By 1933 it had been reported that the boundaries of many forest reserves had been demarcated 'by cut or ploughed lines, marked by posts, or exotic trees planted at intervals' (Kenya, 1933). This was of some significance to the Kikuyu, who accepted that land-use rights could be established by marking out with trees.

Boundary demarcation with exotic trees gradually became the norm. Kikuyu witnesses to the Carter Land Commission gave evidence that even in the early 1930s trees such as eucalyptus and black wattle were sometimes planted in rows by themselves or in conjunction with indigenous trees over the spots where tōka had originally been planted.

Trees on other boundaries. Tree-planting practices for demarcating githaka boundaries were different from the practices which were adopted for marking other boundaries, which were mostly functional or protective hedge establishment practices.
The *githaka* could be quite large, and there was often a need to demarcate boundaries and subdivisions within the larger sub-clan holding. The species which predominated in these boundaries were usually utilitarian in nature, such as *mūū* (*Markhamia hildebrandtii*)—an obvious tree with bright yellow flowers which is especially useful in that it coppices quite readily and can be cropped many times for pole wood. It easily regenerates from cuttings. *Mūkūngūgū* (*Commiphora zimmermannii*) shares these characteristics, and young trees of that species are still frequently found in cultivated fields, where they are used to support climbing plants. Old subdivisions of *githaka* can still be identified where these trees, which grow as high as 20 m, are found.

Around fortified villages (*kīhingo*) near the border of Kikuyu country it was common practice to fell trees and bushes into a barrier, and then to encourage thorny plants to grow around it or noxious creepers to climb over it to make the barrier impenetrable. Plants such as *mūtanda mbogo* (*Pterolobium stellatum*), *mūyuyu* (*Chaetacme aristata*), *mutī* (*Aspilia* spp.) and *mūkawa* (*Carissa edulis*) fall into this category.

Hedges would usually be planted around homesteads. Inevitably there was some specific utility to the planted hedge—for medicinal use, as a famine food, for fodder, or for food. *Mūthakwa wa aathi* (*Crassocephalum mannii*) falls into this category and is still one of the most frequently found indigenous hedge species in Kikuyu country, particularly in Kiambu District. Its leaves have medicinal value. Other hedge species include *mūgoya* (*Plectranthus barbatus*), the leaves of which, packed in with bananas, help to ripen them. *Mūbage* (*Caesalpinia decapetala*) was a native of Mauritius but had been in Kenya for a long time, and is still widely planted as a hedge.

Within the homesteads, boundaries would often be established between individual huts. *Mūhindahinda* (*Trimeria tropica*) and *mūkandū* (*Lippia* sp.) were commonly planted as boundaries between huts. The former was primarily utilitarian and was used for making household implements; the berries of the latter were used as a famine food.

A frequent assumption on the part of the colonial administration was that enclosures of these types were an outcome of Kikuyu contact with European farming. The East Africa Royal Commission of 1953–55, for instance, suggested that enclosure was brought about by the introduction of cash crops and contributed to the decline in tribal control (UK, 1955). In fact others who noted the presence of these enclosures during the earliest stages of European settlement, particularly Leakey and the Routledges, confirm that the practice was common long before Africans were influenced by European farming practices.19

### CONTEMPORARY TREE CULTIVATION AND MANAGEMENT PRACTICES ON FIELD BOUNDARIES

#### Legal contexts of boundary planting

*Boundary demarcation and the colonial government.* Even by the early 1930s it was becoming increasingly important for farm boundaries to be clearly
marked. Land disputes were becoming far more common, particularly after
the Carter Land Commission had made it clear that large areas of land were
not going to become available for the future settlement of Africans.
Although tree planting along boundaries was common in pre-colonial
Kikuyu country, the practice assumed new importance as a means of
unequivocally identifying the limits of a right holder’s land. The ceremony
of marking out githaka boundaries with itoka lilies died out in time, but the
practice of demarcation remained, and was even encouraged by the colonial
administration.

The 1929 report of the Committee on Land Tenure in Kikuyu Province,
for instance, made a series of recommendations for including boundary
marking practices in rules proposed under the Native Lands Trust
Ordinance.20 The rules were proposed for Kiambu District, with the intention
that they would eventually adopted in other Kikuyu districts as well (Kenya,
1929).21 The report recommended: ‘that only Mugumu trees and Itoka lilies
should be used for marking the boundaries of a Githaka . . .’, that ‘it should
be made unlawful for [them] to be planted in lines in any place other than on
a Githaka boundary’, and that ‘it should be lawful for any native authority to
issue orders that any Mugumu trees or Itoka lilies which may be found to
have been planted in lines in any place other than a recognised Githaka
boundary be removed’.

The Chief Native Commissioner, G. V. Maxwell, incorporated the recom-
mandations in a set of draft rules, which also specified that it would be an
offence to plant mûgumo and itoka on any boundary which was not a
gîthaka boundary.22 Maxwell’s draft rules were really an attempt to give
legal foundation, within the body of East African land law, to those dimen-
sions of Kikuyu customary land law which could be clearly articulated. He
also noted the convenient similarity to English common law, in which bound-
ary demarcation with trees has a long precedent. His draft rules were dis-
cussed at length but never implemented, probably because they would
have legitimised some sort of customary system of private tenure—a notion
which the colonial government strongly resisted.

Maxwell’s primary object in drafting rules about sub-clan boundaries was
related to the need for demarcation. While this was clearly a key objective of
the customary practice, a second objective was utilitarian, as boundary plant-
ings were almost always of species which would have been of some immediate
use to the community.

Consolidation, tree planting and contemporary land law. The demarcation
of the boundaries of smallholdings in Kikuyu and other areas with planted
trees gained particular prominence as a feature of land tenure reforms which
accompanied independence. These reforms were introduced for a number of
reasons, but were generally promoted on the basis of the need to reduce the
level of fragmentation in high-potential areas.

Indeed, it was a feature of the gîthaka system of land tenure that, over time,
holdings became progressively more fragmented. Most households had
several distinct and geographically separate plots within the gîthaka. This
was partly a function of the gîthaka system of inherited usufruct, through
the male lineage, which basically meant that lineage holdings would become smaller and smaller over time. When this posed a constraint on the household, usually when a man married another wife, he would approach the muramati to obtain rights to another block of the ġihaka for cultivation. Such blocks were seldom contiguous with plots the household was already cultivating. The situation was greatly complicated by land lending and tenancy arrangements.

There were sound agro-ecological reasons for fragmentation. By cultivating different crops spread over multiple agro-ecological zones, farmers could spread the risks due to micro-climatic variations and to pests and diseases. In the event of drought, for instance, crops on a few plots would fail, but not all of them would fail. The cultivation of multiple plots could also even out seasonal patterns of labour demand, because cultivation and harvesting tasks would be staggered, depending on where the plots were located in the agro-ecological profile.

The extent of fragmentation varied widely. In Kiambu, for instance, it was reported that one farmer held a total of nine acres made up of twenty plots within a radius of fourteen miles. The record was probably in Murang’a, though, where district reports noted that one man had 108 fragments spread over forty acres (Kenya, 1958). The norm in Murang’a was probably that a single farmer would have around five or six holdings totalling around five acres. Households which operated only one parcel were most certainly the exception.

Arguments in favour of consolidating fragmented plots were posed as early as the 1930s:

From the Agricultural point of view, the benefits that may be expected to accrue to cultivation from the consolidation of holdings cannot be overemphasized. The energy that is needlessly dissipated by having to cultivate and protect a number of small scattered plots if applied to a consolidated area might almost double the productive capacity of some areas.

Consolidation was thought to be the key to an agricultural revolution in Kenya, and the granting of individual title was seen as a mechanism for channeling loan funds, and other resources, to smallholder agriculture. Certainly by the 1950s the conventional wisdom held that fragmentation had to be done away with.

The process of consolidation was begun in the mid-1950s, and was only really possible because of the state of emergency which had been implemented as a result of Mau Mau. Because of the emergency, people had been resettled from their homesteads to emergency villages. This meant that the administration could initiate consolidation without having to deal with established homesteads. Consolidation was also seen as a mechanism for rewarding loyalists with economic patronage in the absence of any political interference. Most politicians were in detention and had no way of opposing consolidation or of encouraging others to do so. Initiated as a means of stabilising a conservative middle class based on the loyalists, it confirmed the landlessness of the terrorists, whose confiscated land was thrown into the common land pool prior to consolidation.

Consolidation gained significant momentum as a result of the Swynnerton
Plan, a five-year plan for the development of the reserves. Assistant Director for Agriculture Roger Swynnerton’s *Plan to Intensify the Development of African Agriculture in Kenya* (1954) was a landmark in Kenyan development, and laid important precedents for development planning which guided post-independence Kenya for many years. Consolidation was carried out in conjunction with the Swynnerton Plan.25

Consolidation practices varied from area to area. Generally, a committee of people from the sub-location (*itiūra*) would be formed, consisting of the chief, a registrar and a group of elders.26 They would determine to whom every piece of land in the sub-location belonged. A team of agricultural assistants was employed to measure out the size of each fragment. Once fragments had been identified and measured, aggregate areas belonging to each right holder were determined. The committee, under the supervision of the Agricultural Officer, would mark out on the map and on the ground the boundaries of consolidated plots which were equivalent in area to the total area of the fragments belonging to each right holder. In principle the objective was to include a proportion of arable, cash-crop and grazing land within each consolidated holding.

Finally, once the consolidated holdings were identified, it was necessary to demarcate the boundaries. Boundary demarcation was a critical part of the adjudication, consolidation and registration process. Hedges became the administratively accepted means of boundary demarcation, and were planted immediately after a plot had been consolidated. The reasoning was primarily that they were visible from the air, and could be used for mapping out consolidated holdings from aerial photographs (Wright, 1956). Because of the speed with which it was deemed necessary to map out and register the plots, it was desired as well that hedges were fast-growing. To this end, teams of hedgers were employed by the colonial administration in order to plant hedges quickly around newly consolidated holdings.27 Colonial administrators could forcibly order hedge establishment under the Native Lands Registration Ordinance,28 and smallholders who refused to agree to hedging, or who otherwise neglected the new hedges after they were planted, could be prosecuted.29

The requirement that trees should be planted on holding boundaries was eventually legislated. By the time it was, however, it had lost most of its resemblance to customary Kikuyu demarcation practices. The Land Consolidation Act (cap. 283), passed in the early 1960s in order to enable the process of tenure reform, for instance, noted that ‘The Demarcation Officer may order any landowner ... to demarcate his land, and for the purpose of such demarcation, to erect or plant ... such boundary markers as the said officer may direct’. It was really the process of demarcation which eventually confirmed the role of trees in clarifying rights of land tenure. Indeed, it is this practice, either derived from, or taking place in parallel with, customary demarcation practices which largely accounts for the widespread popularity of hedges and windrows for marking off field boundaries.

*Hedges and windrows.* The planting of hedges and windrows in Kikuyu areas and in many other areas of the country remains especially common. The preferred species in high-rainfall areas include cypress (*Cupressus*
lusitanica), as well as mūbage (Caesalpinia decapetala), mūkawa (Carissa edulis), kaiaba (Dovyalis caffra) and mūtūndū (Croton macrostachyus). In lower rainfall areas the dominant species is kariaria (Euphorbia tirucalli). Hedges are often allowed to become windrows. The three dominant wind-row species are cypress, mūbariti (Grevillea robusta) and mūkindū (Croton megalocarpus).

Around some holdings, cypress is managed as a ‘multi-storey hedge’. Every 3 m or so along a closely clipped hedge a stem will be left untrimmed, and will grow into a full-sized tree. In some parts of Kikuyu country these stems are side-pruned. The branches are used for fuelwood, or are sometimes used to make furniture or small farm structures such as cattle enclosures and fences. Side pruning also increases the light which is available to crops. When the stems are cut, they are usually felled by pit-sawyers who convert them into sawn timber. Cypress is usually planted only in rows; individual stems are seldom planted, except occasionally for shade around households. Cypress was first introduced into Kenya some time before 1920, although the exact date is uncertain. It was first grown in the Nairobi arboretum, but was not seriously adopted by the Forest Department in its plantations until the early 1950s.

The planting of cypress on farms in Kikuyu areas for sawn logs was first noted by the Forest Department in the mid-1940s, when the practice was reportedly quite widespread. Plantings apparently conflicted with other land uses which were deemed—at least by the government—to be more important. It was noted that the widespread planting of cypress ‘may not be such a desirable development as it appears unless such planting is confined mainly to the steeper hillsides’ (Kenya, 1944).

Cypress is especially easy to regenerate. On-farm nurseries are believed to account for the bulk of new plantings, although it is still one of the major species grown in Forest Department nurseries and which are sold to farmers. The department sells at heavily subsidised prices, although seedlings are often resold at much higher prices.

Within the last several years, smallholder cypress has come under serious threat from the cypress aphid, which has devastated large areas of the Forest Department’s plantations, as well as farmers’ hedges and windrows. Because of this, other species are becoming increasingly important to replace cypress hedges and windrows.

Mūbariti (Grevillea robusta) is occasionally grown and managed in windrows much like cypress and is used for both fuelwood and timber and for small farm structures. Unlike cypress, however, it is often planted in and around fields as well as in wood lots. It was originally introduced as a shade tree for coffee plantations.

Mūkindū (Croton megalocarpus) is a fast-growing and popular indigenous species which has a high, twisted canopy. It is unsuitable for building timber, but is occasionally harvested for woodfuel. Because of its high canopy it does not compete heavily with crops.

Changes in tree tenure
The Registered Land Act (cap. 300) of 1963 specified that customary law would no longer apply to holdings which were registered under the Act.
The outcome was that rights of control and rights of use both became vested in the registered landowner, rather than in a lineage authority or lineage right holder. The legislation introduced important changes affecting tree tenure. Trees, as well as 'all things growing on the land ... and other things permanently affixed to the land' were the property of the registered landowner. Rights of control, then, were vested in the landowner rather than in the lineage authority, and it would be up to the landowner to determine whether an individual could use the trees growing there. The effects of the legislation, as with much of the land-related legislation of the 1950s and early 1960s, were most profoundly felt by the landless and by women, who may have had the right to use trees growing on mbari land guaranteed to them by the mūramati but lost it as mbari land was registered in the names of usually male private landowners.30

Mbari lineage land-use right holders (who were probably less likely to need other tree-use rights on mbari land) lost such rights as well. Landed farmers, however, were far more able to respond to the tree scarcities brought about by consolidation and registration than were the landless. Farmers who might otherwise have relied on mbari trees for timber and fuelwood supplies, but who no longer had access to them, were able instead to grow trees on their own consolidated holdings. Indeed, they were already doing so from the 1940s, as real physical scarcities of trees were developing both on right holders' lands and on communal land.

It is unlikely that the guarantees of private tree ownership per se, introduced by the Registered Land Act, actually encouraged farmers to plant more trees. In fact the ownership of planted trees had been guaranteed by customary law. Prior to the implementation of the Registered Land Act, planted trees always belonged to whomever planted them, but only as long as they held some sort of cultivation rights. The Registered Land Act increased the security of these rights (for those fortunate enough to have use rights to mbari land before consolidation), and it was that security which probably had a greater impact (both positively and negatively) on the farmer's interest in tree planting.31

It should be emphasised that, despite the provisos of the Registered Land Act, land administration in Kenya is increasingly returning to norms of customary law in the settlement of disputes. Arguably, the Registered Land Act was never successful at extinguishing rights under customary law.32 Recent changes in legislation have given implicit recognition to this fact.

Before 1981 all disputes concerning land ownership were settled in the courts. This was somewhat problematic because the outcome was often dependent on the ability of the disputants to hire legal assistance. In practice, this meant that people of means were better able to win land disputes. In 1981 the Magistrates' Jurisdiction (Amendment) Act empowered panels of elders to settle land disputes. Its successor, the Land Disputes Tribunal Act of 1990, says quite specifically that tribunals of elders will hear and settle disputes over land according to recognised customary law. The principle of the separability of land from the things found growing on it, then, is increasingly being used where land disputes involve trees (or other planted resources).33 It seems unlikely, however, that rights removed as a
result of contemporary land law (such as the rights of the landless and of women to products from trees on sub-clan land) will be reinstated by this renewed reliance on customary practice.

CONCLUSIONS

Several contemporary tree cultivation and management practices in Kenya are important derivatives of earlier customary tree planting practices. The substantial body of literature on land tenure in Kikuyu areas lends strong support to the view that boundary demarcation with hedges and windrows is a long-standing practice, similar to customary mechanisms for establishing rights of land tenure. Land reform processes gave legal foundation in the body of contemporary Kenyan land law to boundary demarcation with trees, though there have long been strong precedents for the practice in customary law.

Land reform, however, obscured the customary distinction between rights of control of trees and rights of use and access. The outcome has been that land reform increased the security of tree tenure of those with well established rights to cultivate land but greatly reduced—indeed, largely eliminated—rights of use and access to trees on communal land which may have been guaranteed to households or individuals with less secure rights of cultivation. It is the increased security of cultivation rights introduced as a result of land reform, rather than guarantees of tree ownership per se, which has acted as an incentive for farmers to plant trees within their holdings.

NOTES

1 The role of extension in encouraging people to plant trees is beyond the scope of this article. Most recent assessments of government’s extension initiatives are highly sceptical of their relevance. See particularly Wamagunda (1989).

2 Important exceptions are Shepherd (1989), Bradley (1991) and Tiffen et al. (1994).

3 Customary practices need to be distinguished from more widespread and extensive introduced tree planting practices which followed colonial settlement. Extensive tree planting in African areas, particularly of black wattle, which was grown for the sale of its bark to the tanning extract industry, was a relatively recent phenomenon by comparison. The colonial administration first began actively encouraging farmers in Nyeri District to plant wattle and eucalyptus trees from around 1911, and later in Murang’a from around 1917 (Cowen, 1978). Extensive plantings in the reserves were first noted in official reports in the late 1920s (Kenya, 1928, 1930) and by 1932 the Forest Department argued that ‘the afforestation problem had been solved’ in Kikuyu areas (Kenya, 1932). By 1937 there were around 18,000 ha of black wattle wood lots in Murang’a District alone. There was no precedent for planting on this scale in the pre-colonial period.

4 As one of the reviewers of this article suggested, the idea of ‘customary’ law is of course problematic, often being based on both locally and/or exogenously invented or reinvented traditions. We use the term advisedly.

5 Vested in the maxim quicquid plantatur (inaedificatur) solo, solo cedit, meaning ‘whatever is planted in (or built on) the soil goes with the soil’ (Onalo, 1986).

6 In Kikuyu one refers to east and west as rūgūrū and ithero, literally meaning upstream and downstream.

7 Some writers, such as Mackenzie (1989), tend to use the term ngundu instead of gitahaka. The term gitahaka was used widely by writers such as Leakey (1977), who used it to refer to the sub-clan’s holdings, where some sort of rights of use were more widely recognised, rather than ngundu, which referred to the land which was explicitly cultivated by one family of
the sub-clan. Admittedly, *githaka* holdings were seldom undisputed, but in contemporary Kikuyu society the term seems to refer to a more widely recognised right of use (which prevailed prior to the land reforms of the 1960s) than that implied in the use of the term *ngundu*.

8 See particularly Leakey’s description (1977) of the ceremony of mutual adoption and land transactions as they were practised in Kiambu. His views were widely disputed, particularly by the Kenya Land Commission of 1933 and by the East African Royal Commission of 1953–55. The Kenya Land Commission, particularly, chose to bias its findings heavily in favour of the settler community, which could not afford to recognise any prior right of Kikuyu land ownership, however legitimate. Kitching (1980) has aptly noted that arguments about the sale and rental of Kikuyu land were falsely based on the premise that in the pre-colonial situation there was a need for such distinctions. Land was abundant. People to work it were scarce. There was no reason for second-comers to suppose they would be asked to leave, and no incentive for the first residents to make such a request. It became necessary to distinguish between land which was owned and that which was rented only when land itself became a commodity as an outcome of scarcity, and this itself came about as a result of changing land use, increased agricultural commoditisation, and social and economic differentiation.

9 This account is very much an ‘ideal’ view of land tenure in Kikuyu areas, and draws heavily on the views of Leakey (Kenya, 1929; Leakey, 1977). Kikuyu society was (in the colonial period) and is highly differentiated. Systems of tenure were highly variable throughout the region. Some have argued that one can speak only of tenure practices which are specific to sub-clan or ridge groupings. Leakey sought to characterise tenure practices more accurately in a way which directly confronted the official colonial view of African tenure. Though recognising important regional variations in tenure practices, in attempting to codify those practices he downplayed the ambiguities of customary tenure. In conjunction with rising economic and social differentiation among the Kikuyu during the colonial period, these ambiguities led to increasing conflict and confrontation over land rights. Indeed, the *githaka* system was the source of enormous conflict, and attempts to resolve it through the system of Native Courts during the colonial period placed heavy burdens on the resources of those engaged in litigation.

10 Redeemable sales of crops or of other assets feature among the ways of generating investment capital. Trees are sometimes sold under this type of arrangement. It has, for instance, been reported in Murang’a District with regard to the sale of wattles (Von Pischke, 1977). A number of informants, in 1989, confirmed that the practice is still occasionally found among growers of wattle and eucalyptus. Under this type of arrangement, payment at current market prices would be advanced against standing trees when they were young, giving the buyer the right to harvest them whenever he wished—usually seven or eight years later. The seller could buy the standing trees back at the time at the current market price for an agreed-upon product mix (in the case of wattle, for charcoal, bark, building poles, fence posts, or any combination).

11 Murang’a was formerly called Fort Hall.

12 We can offer few new insights into land tenure processes *per se* except that they formed the background of the discussion about tree planting on holding boundaries which follows. Mackenzie (1989) offers one of the better summaries of customary tenure practices in Murang’a District in particular, and describes the changing interface between customary and contemporary land law.

13 Evidence from Jomo Kenyatta to the Kenya Land Commission (UK, 1934).
15 S. H. Fazan, Rhodes House Collection, RH.Mss.Afr.s.1153.

18 Unless otherwise noted, this discussion is derived largely from Leakey’s (1977) fascinating botanical appendix.

19 One objective of this article was to focus explicitly on the planting of trees on field and holding boundaries. There were numerous other customary tree conservation and management practices in Kikuyu areas which antedated colonial settlement. Castro (1991a) provides a good summary of some of these practices.

20 The committee comprised the Chief Native Commissioner, G. V. Maxwell, the Nyeri District Commissioner, S. H. Fazan, who had taken a particular interest in Kikuyu land tenure, and Louis Leakey.
21. See Rhodes House Collection, RH.Mss.Afr.s.1153, ‘Proposed Rules under the Land Trust Ordinance and suggested Amendment to the Ordinance in order to bring the rules intra vires of the Ordinance.


24. See Rhodes House Collection, RH.Mss.Afr.s.1153, Director of Agriculture to the Kiambu District Commissioner, 1 August 1930.


26. We have described the ideal of what was ‘supposed’ to have happened. In fact consolidation practices were widely influenced by the politics of the emergency and of the post-independence period (Throup, 1987; Kanogo, 1987). In many areas, consolidated was intensely resisted. Arguably, however, processes of agricultural intensification which accelerated in Kenya in the 1960s and 1970s would not have been possible without consolidation (cf. Bernard, 1993). Sorenson (1967) provides one of the early cases of land reform in Kikuyu areas.

27. ‘Fort Hall Handing-over Reports (Divisional), Kigumo Division’, D. A. Marsden to P. D. T. Richardson, 21 June 1957, Kenya National Archives, DC/FH/2.


29. ‘Fort Hall Handing-over Reports (Divisional), Kandara Division’, J. A. C. Reed to P. T. W. Powell, dated August 1959, Kenya National Archives, DC/FH2/2.

30. Mackenzie (1990) argues that the manipulation of customary and contemporary land law has increased both gender and social differentiation. Though the manipulation of land law has largely been at the expense of women, there are numerous instances where women, both individually and collectively, have been able to effect control over land.

31. Arguably, tenure insecurity did much to encourage the extensive adoption of black wattle in the 1930s, as it enabled right holders to maintain their land cultivation without relying on ahoi arrangements. As holdings were consolidated, and as titles were issued in the 1960s, there was no longer a need to maintain remote and fragmented parcels under cultivation with wattle. This fact, coupled with the new option which farmers had of planting land with coffee or tea, resulted in the clearance of enormous areas of wattle following tenure reforms in Central Province (Cowen, 1978).

32. Some studies, for instance, have shown that even in regions of Kenya where all land has been titled, customary restrictions on land rights still prevail (Place and Hazell, 1993).

33. There have been a number of cases reported in Murang’a District where disputants have been claiming the right to trees they had planted on land which belonged not to them but to close relatives (D. Mativo, personal communication, August 1988).

REFERENCES


ACKNOWLEDGEMENTS

This article is principally based on extensive archival materials from the Kenya National Archives and from the Rhodes House Collection at the University of Oxford. Additional information was collected from key informants during field work in 1988 and 1989 in Murang’a and Kiambu Districts on a related subject (the planting of trees in woodlots, reported in Dewees 1993). This research was supported by the Rockefeller Foundation and the FAO Forests, Trees and Peoples programme.

ABSTRACT

Tree cultivation and management are a common form of land use in high-potential areas of Kenya. While some of these practices are related to economic considerations, such as markets and prices for specific tree products, others were derived from or developed in parallel with customary practices. This article traces the origins of contemporary demarcation practices in Kikuyu areas of Kenya, involving the planting of trees in hedges and windrows, from their customary antecedents. Customary law prescribed clear mechanisms for demarcating land to which rights of use had been acquired. These mechanisms, characterised principally by the planting of particular trees on the boundaries of land holdings, were given limited recognition by the colonial administration, and were subsequently incorporated (without any clear awareness of their customary role) in the contemporary body of land law which emerged as a result of the land reforms of the early 1960s. Land reforms tended to obscure customary distinctions between rights of control to trees and rights of use and access, by equating rights of control with rights of ownership. The result has been that rights of use and access, which had been guaranteed to the landless under customary law, were, for the most part, eliminated.

RÉSUMÉ

La culture et l’exploitation des arbres sont des formes courantes d’usage de la terre dans les endroits du Kenya qui ont un fort potentiel. Tandis que certaines de ces pratiques sont liées à des considérations économiques, tel que les marchés et les prix pour des produits arboricoles spécifiques, d’autres ont été dérivés de ou développés en parallèle avec des pratiques coutumières. Cet article fait remonter les origines des pratiques de démarcations contemporaines dans les endroits Kikuyu du Kenya, entraînent la plantation d’arbres dans des haies, à leurs antécédents coutumiers. La loi coutumières a prescrit des mécanismes clairs pour démarquer la terre pour laquelle les droits d’usage avaient été acquis.

Ces mécanismes, caractérisés principalement par la plantation de certains arbres sur les limites des exploitations, ont été reconnus avec restriction par l’administration
coloniale et ont été par la suite incorporés (sans une conscience bien claire de leur rôle coutumier) dans le corps des lois agraires contemporaines qui a émergé à la suite des réformes agraires du début des années 60. Les réformes agraires avaient tendance à obscurcir les distinctions coutumières entre les droits de contrôle sur les arbres et les droits d’usage et d’accès, en égalant les droits de contrôle avec les droits de propriété. Le résultat en a été que les droits d’usage et d’accès, qui avaient été garanti à ceux sans terres sous la loi coutumière, ont été, pour la plupart, éliminés.