

# **Trees 2000 – A project to restore indigenous tree plantings in Kenya**

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## **Abstract**

There is increasing recognition of the importance of pursuing many avenues, and with many partners, to achieve the conservation of diversity in our environment. This account describes the initiatives of an agricultural company in Kenya to both sustain and restore diversity within their own property and also to encourage neighbouring communities to focus further interest on the conservation and planting of indigenous trees. The project was initiated in 1999 and formally launched in 2000. Planting materials were initially gathered from diverse sources but subsequently produced by in-house nurseries from seed selected from both neighbouring forest and project plantings. The first plantings were focussed on forest restoration, riverine strips and housing areas within the company property, but were soon extended to include the wider community – schools, hospitals and public open space. The project has evolved to achieve the planting of over half a million trees by year-end 2006.

## **Background**

The importance of forests world-wide in sustaining our environment is well known. Forests now occupy less than two percent of Kenya's land area but play a crucial role as reservoirs of biological diversity and in providing the principal water catchments in a country with vast, and extending, arid regions. At the same time, the higher rainfall in the vicinity of these forests, combined with fertile soils, has resulted in progressive encroachment on remaining forest areas, for both the extraction of forest products and clearance for agricultural production and associated settlement. As a consequence, biodiversity is threatened, convectional rainfall is becoming less consistent and water catchments are degrading.

The increasing urgency of taking steps to both prevent further degradation and restore the quality of remaining forested areas has been recognised by diverse groups, including the tea industry which provides the largest single source of foreign revenue for the country. The majority of tea production is in the small-holder sector, although there are a few larger companies, including Unilever Tea Kenya (UTK) which cultivates eight thousand hectares of tea around Kericho in western Kenya.

The UTK property borders the Mau Forest reserve, one of the major remaining areas of indigenous forest in Kenya, and crucial to the rainfall and water supply in one of the country's most productive farming areas. In addition to tea and fuel wood plantings, the company maintains some fifteen hundred hectares (eleven percent of the land holding) as conservation areas – being tracts of indigenous forest, riverine strips, tree collections and other amenity land. In addition to a rich diverse flora, these forest habitats also provide for a wide range of animal, bird and invertebrate species.

UTK had long been a concerned lobbyist for forest conservation but also recognised the need for leadership in taking specific action within its areas of influence. Following a pilot project in 1999, it was decided to initiate an indigenous tree planting programme: 'Trees 2000'. The objective was to plant indigenous tree species both within the company's estates and, with co-operation from relevant stakeholders, in adjacent rural areas: along forest edges and riverine strips, in areas proving marginal for agriculture, along roads, and

around housing areas, offices and schools. Such planting would promote environmental awareness, increase biodiversity, help replenish depleted reserves of indigenous trees and provide resource and amenities for local people.

### The identification of tree species for the programme

A combination of literature reviews, including species incidence maps, in-house expertise and the local people who had knowledge of traditional names and uses of forest trees enabled a key reference list to be developed. The botanical names were always used as the ultimate source of reference, but wherever possible these were correlated with common names and local names (see Table 1). The working list included over fifty species.

Botanical name	Common name	Kipsigis	Kikuyu
<i>Albizia gummifera</i>	Peacock flower	Seet	Mukurwe
<i>Croton megalocarpus</i>	Croton	Kelelwet	Mukindiru
<i>Erythrina abyssinica</i>	Red hot poker tree	Chebisorwet	Muhuti
<i>Hagenia abyssinica</i>	Hagenia	Bondet	Muthithiku
<i>Jupinerus procera</i>	Pencil cedar	Tarakwet	Mutarakwa
<i>Markhamia lutea</i>	Markhamia	Mobet	Muu
<i>Olea capensis</i>	Elgon olive	Masaita	Mucarage
<i>Olea europea ssp.africanum</i>	Wild olive	Emitiot	Mutamaiyu
<i>Podocarpus falcatus &amp; latifolius</i>	Podo	Saptet	Muthengera
<i>Prunus africana</i>	Red stink wood	Tendwet	Muiri
<i>Spathodea campanulata</i> (= <i>nilotica</i> )	Nandi flame	Sebetaiyet	
<i>Syzygium guineense</i>	Waterberry	Lemeiywet	Mukoe
<i>Warburgia ugandensis</i>	East African greenheart	Soket	Muthaiga
<i>Zanthoxylum gillettii</i> (= <i>Fagara macrophylla</i> )	African satinwood	Sakawaita	Muchagatha

Table 1 – Sample list of trees selected for planting

The final selection of material was made on a range of criteria, including suitability for a particular planting location, biodiversity mix and value for food, timber, medicinal or ceremonial use.

## The sourcing and propagation of material

The company had extensive tea and fuel wood tree nurseries, all operated to a high standard. There was clearly the potential to extend these to include indigenous tree production, but the project needed to be initiated with planting material from other sources whilst appropriate propagation techniques were developed and plants grown. Sources included Kenya Forest Research Institute (KEFRI), International Union for the Conservation of Nature (IUCN), Nairobi nurseries and dedicated conservationists who were growing material known to be in decline. However, much of this represented the local species that were of interest for amenity plantings or commercial timber and there was rarely volume of appropriate species for the Kericho area. The selection of material of local provenance became a priority, through the collection and growing on of wildings (e.g. *Allophylus abyssinicus*, *Podocarpus latifolius* and *Xymalos monospora*) and the planting of locally collected seed (e.g. *Hagenia abyssinica*, *Prunus Africana*, *Syzygium guineense* and *Zanthoxylum gillettii*). In-house capacity was developed in five nurseries, scaling up to over 200,000 seedlings under production during 2006.

### The development and documentation of planting techniques

Clear specifications were prepared as to the planting techniques to be employed, including site preparation, tree spacing and planting patterns, planting, protection and subsequent maintenance. Emphasis was also placed upon securing 'ownership' of material planted, at the time of planting, to ensure co-operation in the protection and upkeep of the young trees during the first few years.

The selection of planting locations

The initial emphasis of the project was on the planting of trees within the company land:

- *Restoration*: - riverine strips; forest edges; marginal agricultural land.
- *Tree collections*: - rehabilitation of an existing arboretum, which included exotic species (established 1950s); creation of new (named) tree collections of indigenous species.
- *Landscape/amenity planting* - windbreaks; roadsides; camps; schools; hospitals.

Whilst this programme was on-going, the profile of the project was gradually raised externally through the planting of trees in key public locations, for example along major roadsides, in market areas and at schools and churches. This remit was progressively extended to the extent that the distribution of trees for planting externally now exceeds the in-house programme. In many instances, the external recipients are groups with the requisite skills and knowledge to successfully select suitable sites and execute their own planting programme with the material provided. In other circumstances, the company will provide appropriate support.

## Planting implementation

The project focussed from the outset on ensuring 'action' – no meeting was held, even in the planning stage, without the 'steering committee' planting trees with local groups. This ensured the hands-on involvement of everyone and a visible outcome from which all could learn.

During the first year of the project, 11,500 trees were planted on company land and a few hundred at external locations. The scale of the programme has been progressively increased to achieve some 275,000 trees planted on the company property by the end of 2006, and almost 300,000 contributed to external programmes. The principal recipients of the latter material include local communities, municipal projects, Egerton University (for their new botanic garden), WWF (for planting in the Mau Forest water catchment area) and UNEP (for other projects in Kenya).

A clear ambition of the project has been to make a strong statement as to the importance of such conservation activities, raising the profile of concerns as to the dangers of forest degradation and ultimately securing support for appropriate changes in forest legislation and its implementation. To this end, every employee is asked to plant two trees each year and every visitor to the company is 'invited' to join the initiative in planting a tree; the visitors trees are labelled with the species name, the name of the planter (whether they be next-door neighbour, Government Minister or foreign Ambassador) and date of the planting.

In the same vein, a strong emphasis has been placed upon environmental education as an element of the programme, for schools, other growers and local community groups.

### **Further opportunities**

- Increase use as an educational resource;
- Develop appropriate techniques for the gradual re-establishment of under-story vegetation;
- Assess the potential of local species as a renewable resource, including the sustainable harvesting of forest trees for food and medicinal purposes and their use in commercial plantings for timber and fuel;
- Share the techniques with other communities which have a different tree flora.

### **Partner organisations**

The project has developed important partnerships with other organisations involved in forest restoration work, including The Friends of the Mau Watershed (FOMAWA), the World-Wide Fund for Nature (WWF), the United Nations Environment Programme (UNEP) and The Kenya Forest Working Group.

### **A role for botanic gardens**

This project has demonstrated the potential contribution of an agricultural business and the associated community to habitat restoration and reclamation. However, such a process could be significantly enhanced by the contribution of specialist knowledge and guidance in:

- Species identification;
- Species selection;
- The sourcing of planting material, including propagation techniques;
- Forest re-establishment techniques; and
- Project monitoring and evaluation.

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