

Principle

There are many advantages in planting a common woodlot. In the same way as seed banks, woodlots help APC members to preserve their resources. As trees are located on a common land, where members are not allowed to go without other members' consent, villagers are not tempted to over-exploit trees. Therefore, common management ensures a rational use of forestry resources.

This group activity is also an efficient mean for APC members to share knowledge on tree upkeeping and to divide work tasks (weeding, pruning, surveillance). They can then apply the techniques they have learnt to their own trees.

Finally, with regards to national issues of deforestation and lack of firewood, the implementation of common woodlots is a good way of reforesting and preserving agricultural soils from erosion. This activity also contributes to preserving the biodiversity, to reconstituting a reserve of seeds and to boosting natural tree regeneration. Finally, by sustainably exploiting their own trees, farmers put less pressure on indigenous trees.



Common woodlot in Makhanga GVH. Abadia (2016)

Uses of Trees at Group Level

Before taking the decision of planting a common woodlot, it is important that members think about a management plan for these trees. On one hand, they have to organize the common work for the upkeep (firebreak, weeding, pruning, etc.) and on the other hand, they have to think about the way they will use these trees.

Most of the time, common woodlots are planted on a community land. Therefore, it is very important to reach an agreement with the traditional chief in order to avoid conflict. They have to discuss the ownership of these trees and the operating conditions of the woodlot : Will the woodlot only belong to the APC members or to all the villagers? What will happen to the trees if the APC collapses? When and for which purposes will the members be allowed by the chief to exploit trees?

Examples of common wood uses by former APCs :

- ✓ Cooking bricks for pig pens.
- ✓ Cooking bricks to enlarge (or rebuild) the common granary.
- ✓ Fixing a bridge in the village.
- ✓ Reforesting and enlarging the graveyard.
- ✓ Supporting members in the organization of funerals.
- ✓ Cutting (and replanting!) a few trees every year and using the money to buy material for group activities.

Establishment

Common woodlots are usually planted on a community land, chosen by the traditional chief. The plot should be located in a land unsuitable for agriculture. Woodlots can also be planted on hills to prevent soil erosion and to avoid competition for land with agriculture.

Species

Several species are suitable for woodlots (table below) but it is better to not mix them inside the woodlot as fast growing species will compete with slow growing species and prevent them from growing properly (Clinton Development Initiative , 2011). According to traditional chiefs in TA Chadza, this is especially true for indigenous and exotic trees.

Nevertheless, it is important to promote mixed-species woodlots to preserve biodiversity and address the needs of villagers in terms of timber, firewood and non-wood products.

In this way, it is interesting to plant different species in the same place but in separate strips. After a few years, the natural regeneration will lead to a mixed woodlot.

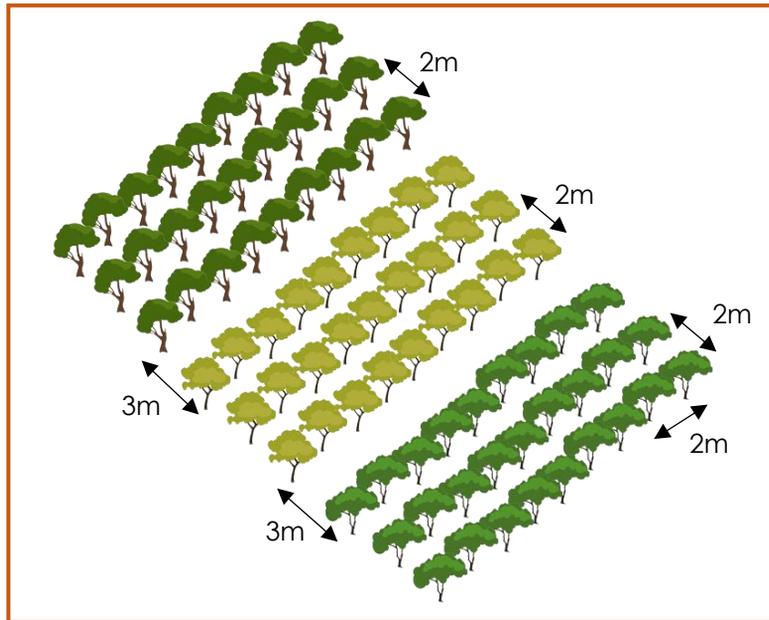
A good example of this type of woodlot is visible at Makhanga GVH, on the slope of the Ngala mountain (picture above).

Suitable species for common woodlots	
Exotic species	Indigenous species
Albizia lebbbeck (mtangatanga)	Acacia nigrescens (mkunkhu)
Azadirachta indica (nimu)	Acacia polyacantha (mthethe / mnyungo)
Bambuseae sp. (msungwi)	Azelia quanzensis (msambafumu)
Delonix Regina (mchekeche)	Bauhinia thonningii (msekese)
Eucalyptus sp. (blue gum)	Erythrina abyssinica (Muwale / Chisale)
Gmelina arborea (malaina)	Faidherbia albida (msangu)
Leucaena leucocephalia (lukina)	Julbernardia paniculata (mtondo)
Melia azaderach (indya)	Khaya nyasica (mbawa)
Senna siamea (keisha wa milimo)	Moringa oleifera (moringa)
Senna spectabilis (keisha wa maluwa)	Rauvolfia caffra (mwimbi)
Toona ciliata (sendrella)	Parinari curatellifolia (maula)
	Uapaca kirkiana (masuku)

Density

The density of plantation can vary according to tree species, water resources and soil nutrients but a general spacing might be :

- ✓ 2x2m between trees of the same species.
- ✓ 3x3m between trees of different species.



Spacing between trees in woodlots. Abadia (2016)

Upkeep

A proper upkeep is essential to ensure the success of a common woodlot. It requires an effective organization between APC members to adequately share the work among themselves. The five first years are critical in terms of upkeep, following which little work is required.

Long term benefits provided by the woodlot will be all the more important if the upkeep is properly done.

Protection

To ensure a high survival rate, it is important to protect trees against livestock. For a large number of trees, it is more efficient to build a common fence rather than individual fences.

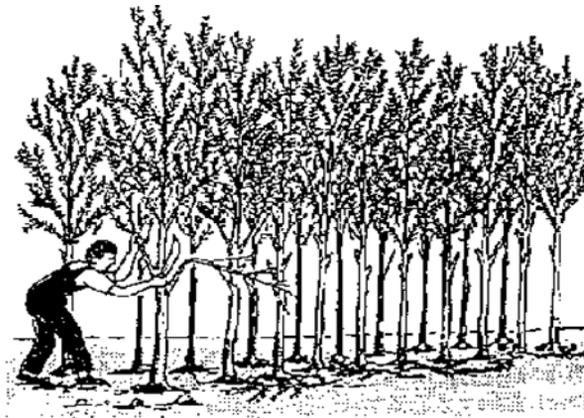
The fence can be made with maize stalks, *Tephrosia vogelii*, wooden sticks (similar to fences around cassava fields).

Weeding

During the first three years, weeding has to be done twice a year. Following that, weeding must be done once a year for one or two years, until there is enough shade to prevent weeds from growing.

Pruning

Trees which are reserved for timber production have to be regularly pruned on the sides to provide clean trunks. *Senna spectabilis* (keisha wa maluwa), *Eucalyptus sp.* (blue gum) and *Rauvolfia caffra* (mwimbi) should be pollarded to boost the production of posts and firewood.



Side pruning. Tengnas (1994)

Firebreak

It is very important to build a firebreak all around the woodlot to avoid an accidental destruction of the trees. In grasslands, a distance of 1 - 3 meters is recommended (MAIWD , n.d). The firebreak can be made by thinning vegetation and clearing ground materials around the woodlot to slow the progression of fire.

Economic value

With a spacing of 2x2m, the number of trees per acre is 1,011.

With a marketable value of 1,000 – 2,000 MK/tree, APC members should be able to earn over **1,000,000 MK/acre** of woodlot.

With a low cost of establishment, wood production should be seen as a cash crop and benefits have to be considered on the long term.

Surface area (acre)	Number of trees	Potential benefits (MK)
1	1,011	> 1,000,000
0,5	505	> 505,000
0,2	201	> 201,000

Bibliography

Clinton Development Initiative (2011) "*Woodlot Technical Specification For Trees of hope project*". 29p.

Ministry of Agriculture, Irrigation and Water Development (n.d) "*Fire Breaks*". Accessed December 26, 2016.

[<http://www.catchmentguidelines.org.mw/en/technical-guidelines/disaster-preparedness/fire-management/firebreaks>].

Tengnas B. (1994) "*Agroforestry extension manual for Kenya*". Nairobi: International Centre for Research in Agroforestry.