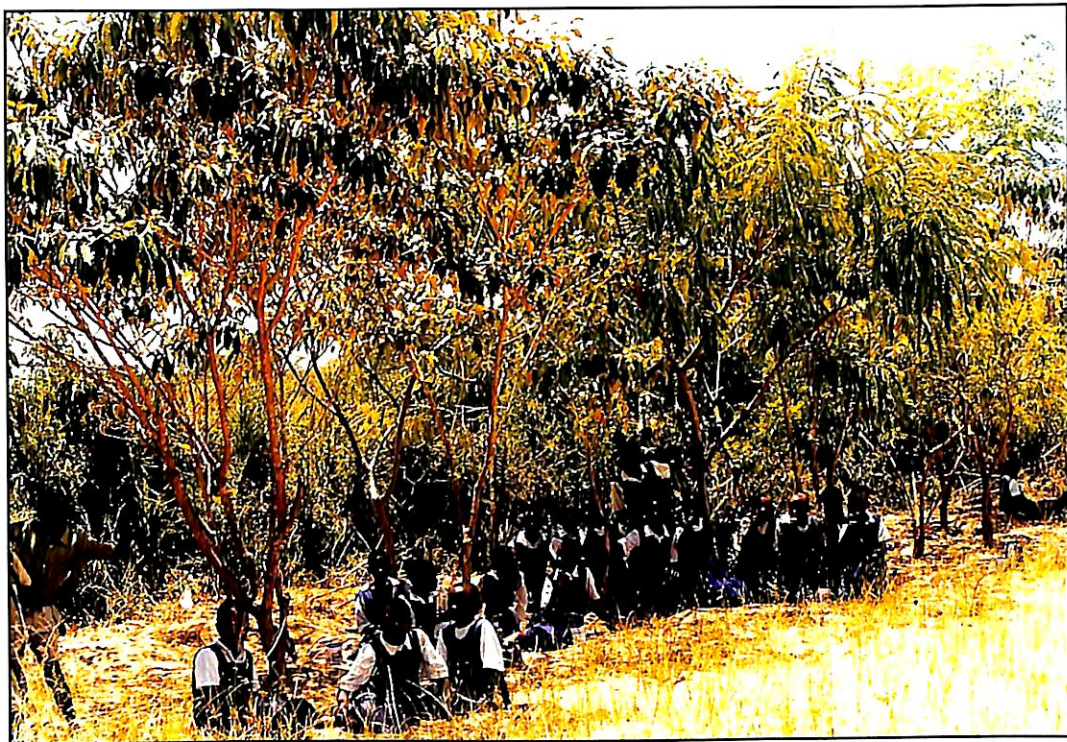


SOFEM

**Social Forestry
Extension Model
Development Project**
for Semi-Arid Areas in Kenya



**Kenya Forestry Research Institute
Japan International Cooperation Agency
Forest Department**



Background of the Project

The arid and semi-arid lands (ASALs) covers over 80% of the total land in Kenya. Previously this area was considered abundant to possess resources adequate for the inhabitants and their livestock. However, due to immigration of people from the high potential areas and general increase population, immense pressure has been exerted on the limited natural resources including trees resulting in degraded land. With the increasing population, demand for wood and non-wood products has also risen dramatically. Therefore, the government and several other development agencies are focusing on rehabilitation programmes on ASALs, e.g. tree planting so as to make them more productive and thereby contribute to the rural economy.



Objective of the Project

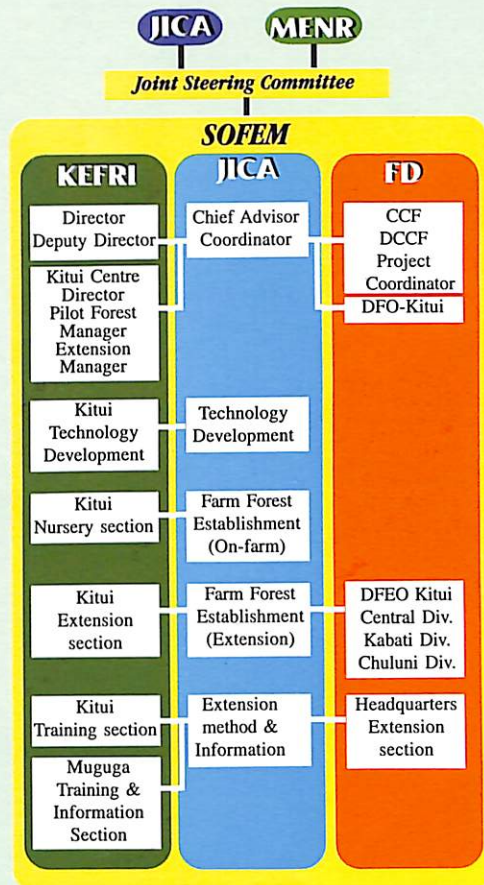
SOFEM aims at equipping the inhabitants of semi-arid areas in Kenya with appropriate techniques to plant and manage trees through establishing farm forests by the local residents.

In order to achieve this, SOFEM is expected to have the following outputs.

1. Practical techniques for planting and tending trees for establishment of farm forest by conducting on-station and on-farm technology development activities.
2. Appropriate method of farm forest establishment developed with initiative of local residents through practical training of farmers and extension agents.
3. Information on social forestry extension shared with other people and other related organization by conducting information collection, synthesis and dissemination.



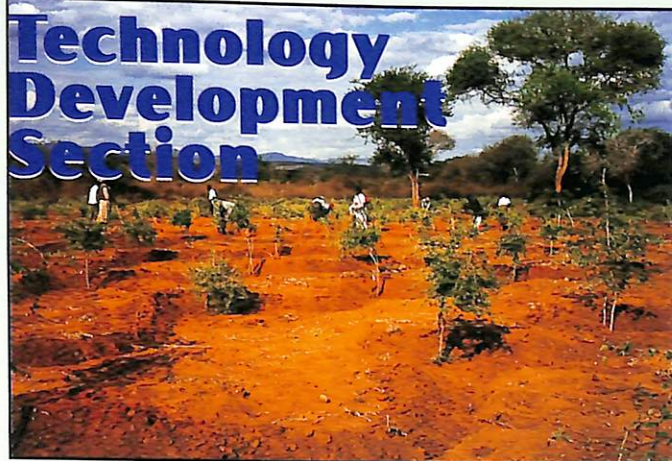
Organization



Social Forestry

Social Forestry is a policy concept that governs tree growing by the people within their individual or communal settings mainly for their own consumption on a sustainable basis. It differs from industrial forestry which is characterized by monocultural plantation of species specifically grown for industrial exploitation.

Social Forestry includes practices such as establishing small scale nurseries, establishing woodlot within homestead, boundary planting and avenue planting to meet the daily needs of the rural population like fuelwood, fodder, poles, fruit, shade, and medicine. Therefore the products of social forestry activities are mainly for domestic consumption but when surplus is produced, it may be used to generate income.



In order to develop practical technologies of planting and tending trees in semi-arid areas that are applicable to the farmers using their own resources, the technology development section is carrying out the following experiments.

1. Seed germination
(to increase germination ratio of *Melia volkensii*)
2. Root system development
(sketch root system, measure weight and depth of roots, etc.)
3. Water catchment
(W-shape, V-shape, Turkana)
4. Weeding
(complete weeding, slashing)
5. Spacing
(1.0 x 1.0m, 2.0 x 2.0m, 3.5 x 3.5m, 4.0 x 4.0m, 5.0 x 5.0m)
6. Coppicing -cut the stem at the following heights ;
(10cm, 40cm, 70cm, 100cm, 150cm height)
7. Measurement of water regime of tree
(Soil Moisture, Water stress, Evaporation, Evapotranspiration)



List of Species Commonly used by the project

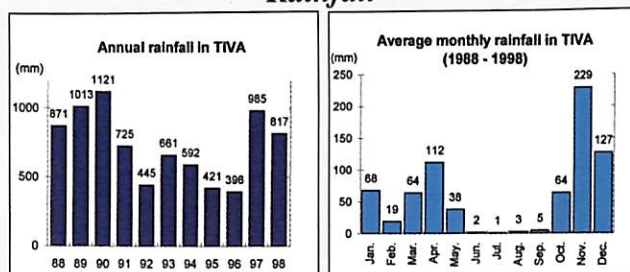
Indigenous species

Acacia nilotica
Acacia polyacantha
Acacia senegal
Acacia tortilis
Adansonia digitata
Balanaties aegyptica
Berchemia discolor
Croton megalocarpus
Dalbergia melanoxylon
Melia volkensii
Sclerocarya birrea
Tamarindus indica
Terminalia brownii
Terminalia pruniodes
Vitex doniana
Ziziphus mauritiana

Exiotic species

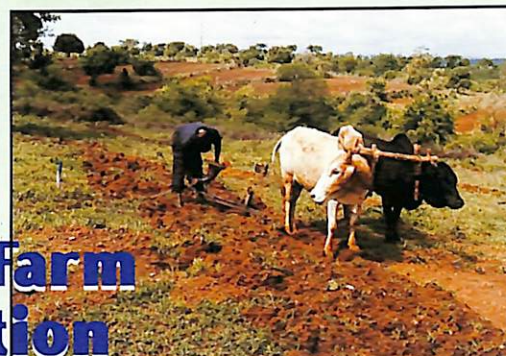
Azadirachta indica
Carica papaaya
Casuarina equisetifolia
Delonix regia
Dovyalis caffra
Eucalyptus camaldulensis
Grevillea robusta
Jacaranda mimosifolia
Leuceana leucocephala
Mangifera indica
Moringa oleifera
Prosopis juliflora
Psidium guajava
Senna siamea
Senna spectabilis
Terminalia mentalis

Rainfall



Average annual rainfall in Tiva between 1988 and 1998 was 731mm.

On Farm Section



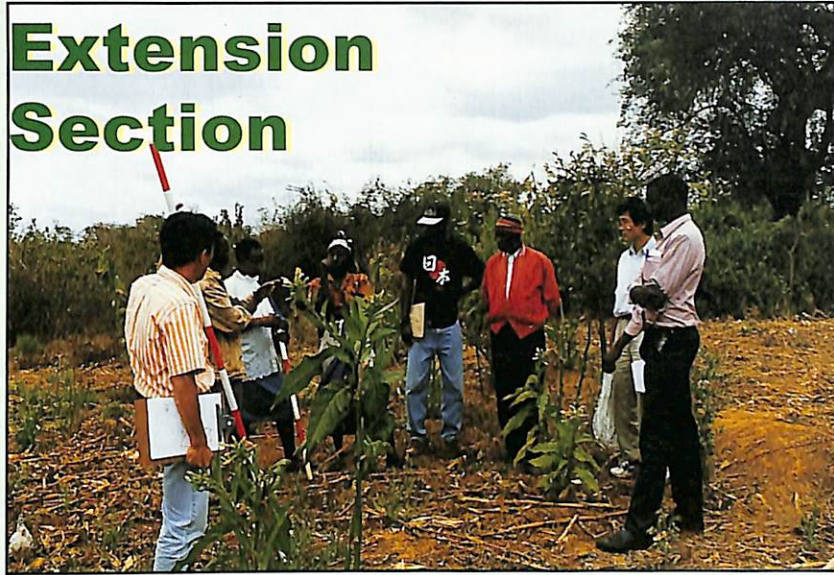
On farm experiments consist of trials carried out on the farmer's land. The main purpose of this activity is to verify some technologies developed in TIVA Pilot Forest. It also demonstrates such techniques to the neighbours of the farmers showing the different performance of the planted trees. The techniques that the project is implementing include:

1. Site preparation
(oxen plough, hand tilling)
2. Water harvesting
(V-shape, W-shape)
3. Hole size
(20x20cm, 45x45cm, 60x60cm)
4. Weeding
(complete weeding, spot weeding, slashing)
5. Pruning
(pruning at different heights)

In addition, some varieties of grafted mangoes and oranges and some species of fodder trees are planted in order to find suitable ones for the dry areas. The project keeps records of rainfall and carries out soil profile studies of some selected farms in order to understand the land condition in the target area.



Extension Section



The objective of the extension section is to establish farm forests with initiative of local residents through provision of practical techniques developed by the project.

In order to achieve its objective, the section is conducting the following activities.

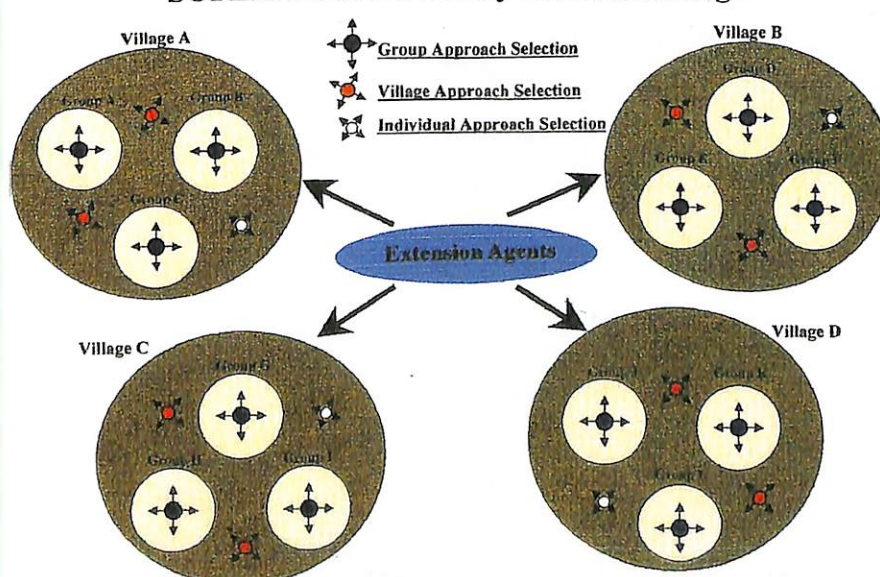
1. Identification of target farmers for farmer to farmer extension.
2. Conduct profile survey to establish farmer's status, needs, problems and opportunities and designing of farm forests.
3. Training of target farmers to provide necessary techniques for farm forest establishment.
4. Monitoring of established farm forest and feedback the result to technology development section.
5. Develop farm forest establishment guideline for extension agents.
6. Facilitation and training of grass-root extension agents.
7. Development of training materials, e.g. establishment of farm forest demonstration plot, manuals and leaflets.
8. Create favourable environment for promoting farm forestry activities by local residents, e.g. development of seeds/seedlings information system and cost sharing of planting materials.

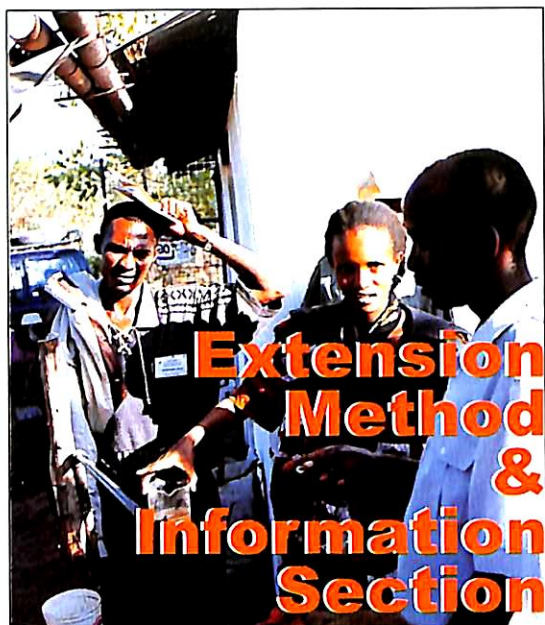
Farm Forestry

Farm forestry is defined as small scale tree planting activity by individual farmers on their farmland to provide wood products, i.e. fuelwood, timber, poles, fodder, food, fibres, tannin, gums, honey etc., and other valuable services such as windbreaks, shelter belts, shade, soil conservation and improvement.



SOFEM's Farm Forestry Extension Image



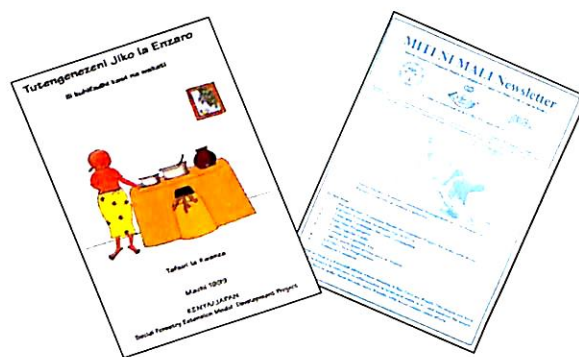


- Information gathering from outside sources through; collecting publications, exchanging information with other relevant institutions and analysing successful case of farm forest establishment.
- Keeping records of project activities and storage of information accumulated through project activities. This also involves collecting information from farmers and extension agents in order to include their views in developing appropriate extension methods.
- Developing social forestry extension materials through activities such as producing videotapes on tree planting and issuing publications.
- Dissemination of information through publications or events such as: seminars, mobile shows, and publishing of the project newsletter.

The information section is developing appropriate extension methods on social forestry in semi-arid areas based on experiences accumulated through the project activities and information on social forestry extension gathered from outside the project. More over, it has the mandate to collect information on social forestry extension, process it and disseminate it to extension agents and others involved in related activities.

The activities being undertaken can be categorized into five main groups:

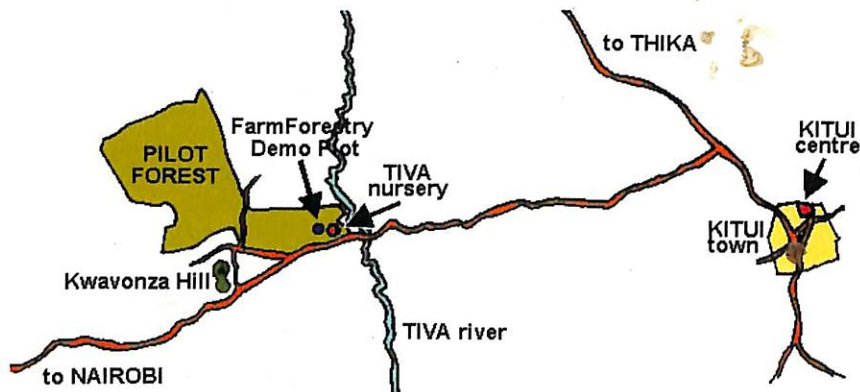
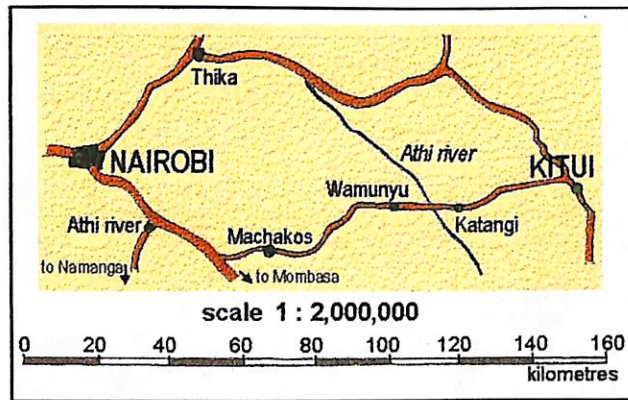
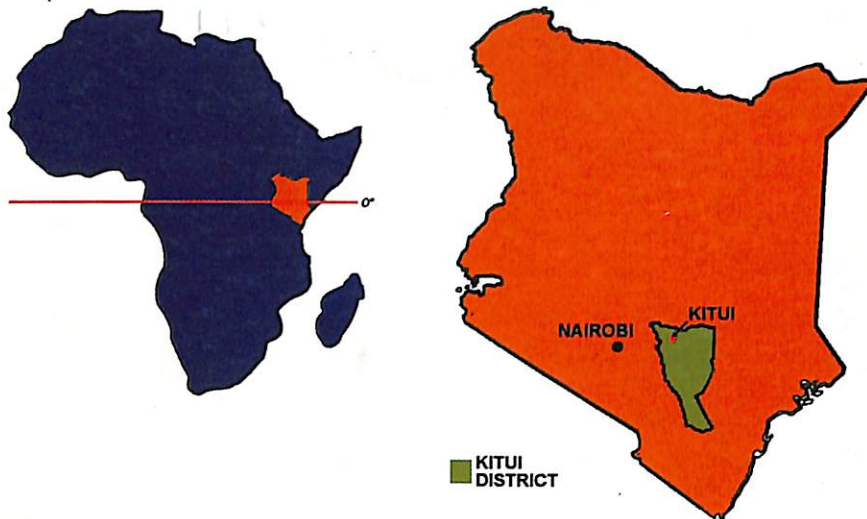
- Preparatory activities which form the base for other activities. These include clarification of information flow on social forestry extension activities and preparations of guideline for information activities.



Project Chronology

- Apr.1982 “Production of 200 Million Tree Seedlings per Year : A strategy and Focus on Rural Tree Development” by Presidential Order.
- Feb.1983 A first JICA forestry development team was dispatched to Kenya.
- Apr.1984 Kenyan Government made official request to Japan on seedling production.
- Nov.1985 Preparatory Phase of the Project started.
- July1986 Kenya Forestry Research Institute (KEFRI) was established.
- Nov.1986 First planting in the Pilot Forest was executed.
- Nov.1987 Social Forestry Training Project (First Phase) , 5 years, started.
- Mar.1988 Japan’s grant aid construction, “Nursery Training Centre for Social Forestry” was completed.
- Nov.1992 Social Forestry Training Project (Second Phase) , 5years, started.
- Dec.1993 Grant aid project for Expansion of Nursery Training Centre for Social Forestry was agreed between the both governments.
- Nov.1997 Social Forestry Extension Model Development Project (SOFEM), 5years, started.

Project Map



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