Kisii
Agroforestry/Energy Centre

Information bulletin No. 1

Kenya Renewable Energy Development Project (KREDP)

Kenya Renewable Energy Development Project (KREDP)

The Kisii Agroforestry Centre is part of the Kenya Renewable Energy Development Project (KREDP). KREDP was initiated in October 1981 as a bilateral project between the Governments of Kenya and the United States of America to address several critical national energy problems as well as to assist the Government's institutional capacity to solve these energy problems.

To achieve these objectives, the project operates several major programmes including:

- Agroforestry,
- Cookstoves and charcoal kilns,
- Energy conservation and fuel substitution, and
- Funding of small innovative projects (Energy Development Fund).

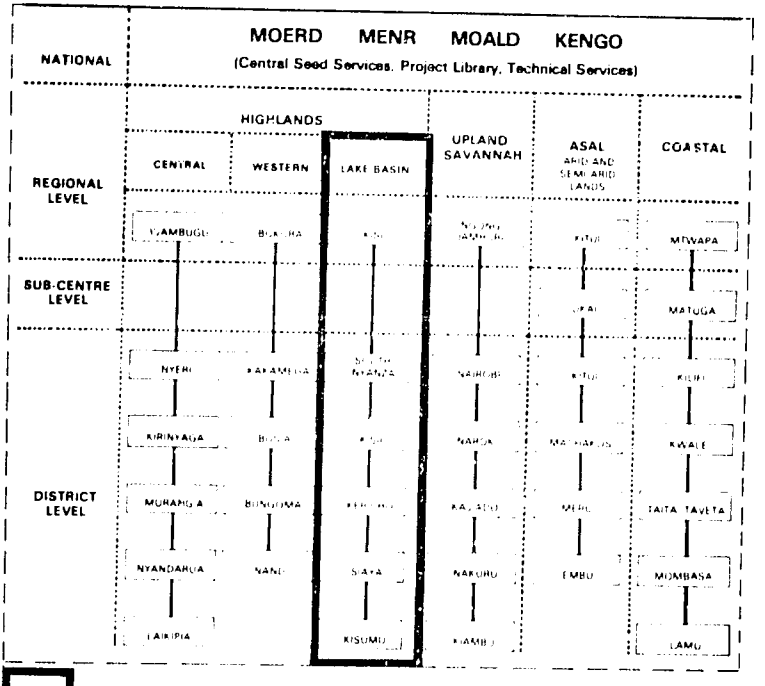
The implementation of KREDP is being administered by the Ministry of Energy and Regional Development (MOERD) with close collaboration from the following agencies:

Ministry of Agriculture and Livestock Development (MOALD),
— Ministry of Environment and Natural Resources (MENR), and
— Kenya Energy Non-Governmental Organizations Association (KENGO).

The physical, institutional and operational bases of KREDP are the six regional Agroforestry Energy Centres of which Kisii Agroforestry/Energy Centre, the subject of this bulletin, is one. The regional centres and their associated sub-centres and district extension programs are serviced by headquarters based central services such as the Central Seed Services Unit and the project library/documentation services in Nairobi.

KREDP is partially funded by the United States Agency for International Development (USAID). The implementation of the project is being assisted by Energy/Development International (E/DI), a private consulting firm.

KREDP Regional and District Programmes



Programmes covered in this bulletin

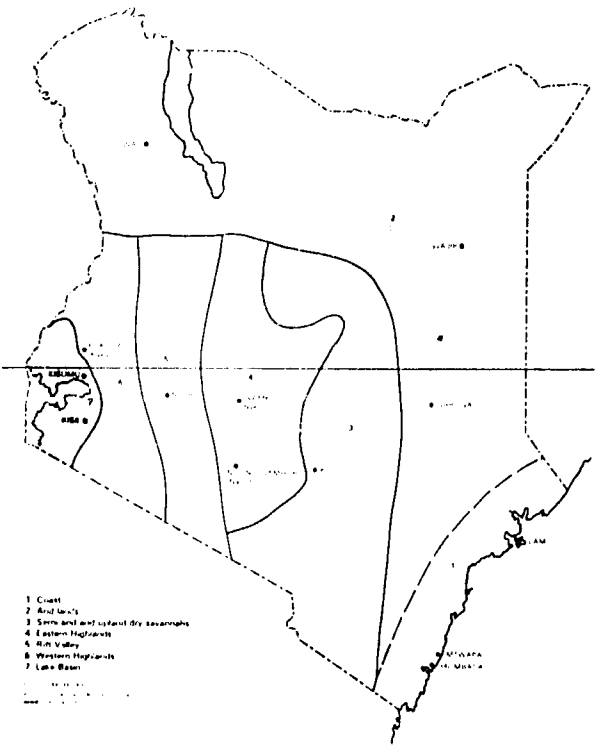
Contents

1. Location

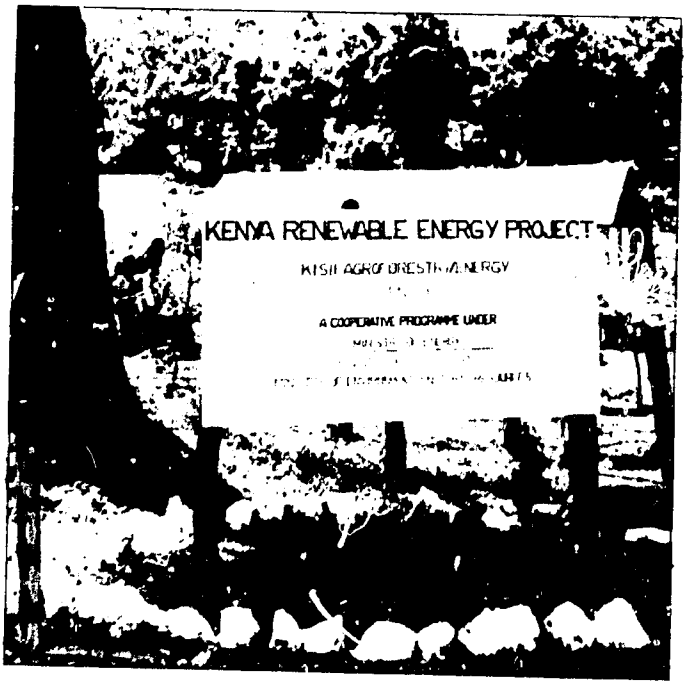
The Kisii Centre is one of six regional Agroforestry/ Energy Centres. The establishment of the Centre was initiated in October, 1982. The Centre is physically housed in the 25 hectare Kisii Farmers Training Centre and is within the Kisii Municipality. The Kisii Centre has 3 hectares for its on-site programmes and activities. The Centre is housed next to and works closely with the Nyanza Research Station.

The region being served by the centre is diverse ecologically ranging from semi-arid areas next to Lake Victoria (as little as 800mm annual rainfall) through the high potential highland areas surrounding these. The Districts covered by Kisii Centre include Siaya, Kisumu, South Nyanza, Kisii and Kericho (Figure 1). Population densities in the Lake Basin are high and are growing leading to ever greater pressures on the land for food, forest products and other services. Agroforestry, through its ability to improve soils and increase land productivity has great potential to help to meet the growing needs of the Lake Basin.

Figure 1



Area serviced by Kisii Centre



Kisii Agroforestry/ Energy Centre: *As noted in the above picture, the Kisii Centre is a collaborative programme between three government ministries. The lower photograph shows the Centre's field programmes. The maize in the picture is in the agroforestry research plots. In the background are the FTC and Centre buildings.*

2. Goals and Objectives

As part of the national renewable energy development effort, the Centre serves to:

- Reduce deforestation and environmental degradation through increased tree planting efforts, particularly by the application of agroforestry techniques;
- Reduce demand on the present national woodfuel reserves through the introduction of more efficient stoves, charcoal production techniques (kilns), biogas, and wind and solar technologies; and
- Develop institutional infrastructure for renewable energy development programmes.

Participants *from a recent agroforestry training course display their certificates.*

3. Present Programme Components

To achieve the above stated objectives, the Centre operates the following programmes and activities:

- Tree seed services (local collection and distribution),
- Tree nursery for both production and training,
- Agroforestry research/demonstration plots and on-farm demonstrations,
- Training, extension and technical services in agroforestry,
- Improved stoves development, artisan training and demonstration, and
- Biogas technology development and artisan training.

4. Cooperation and Aministration

The Kisii Centre has enjoyed and continues to enjoy close cooperation from several GOK agencies and NGOs, including:

Kisii, Homa Bay and Siaya FTCs (MOALD),
Nyanza Research Station (MOALD),
Valley Bottoms Reclamation Project (MOALD),
District Forestry Programmes (MENR),
Office of the President (OP),
Kenya Woodfuel Development Project (MOERD),
Care-Kenya,
KENGO,
Tom-Mboya Agroforestry Centre (Rusinga Island), and
Primary and Secondary Schools.

The development of the Kisii Centre and its services has been greatly facilitated by these organizations.

5. Physical Developments Completed (1985)

The Kisii Agroforestry/Energy Centre, and its extension services have been given full access to existing training, research and physical facilities of other GOK and NGO programmes. These include classrooms, conference rooms, dormitories, catering facilities, livestock and transport vehicles. The Kenya Renewable Energy Development Project has, however, developed the following at the Kisii FTC:

Structures:

1 office/store building,
1 jiko production/training workshop,
1 biogas unit, and
1 water tank (5,000 gallons).

Nursery:

The Kisii nursery has a production capacity of 250,000 seedlings per year.

Research/Demonstration Farms:

Two hectares of agroforestry research and demonstration plots have been established.

6. Agroforestry Programme

6.1 Nursery

The central nursery at Kisii serves as a source of tree seedlings and, as well, as a demonstration and training facility. Practical training given to farmers, schools and NGOs active in tree planting includes:

- Tree seed collection, processing and storage;
- Propagation methods including seed pretreatment, germination, cuttings and budding;
- Nursery management including site selection and preparation, seed beds and seedling beds, seed sowing, watering/water conservation, weeding and root pruning, and
- Tree planting including handling, transportation, planting sites, transplanting and protection.

Seedlings of more than 30 tree/shrub species (Table 1) are produced by the centre in an attempt to cover a wide range of species including ones that are both ecologically suitable and demanded by the farmers, schools and NGOs. Seedlings being produced include species for woodfuel, timber, soil and water conservation, fodder and for fruits.

Seedling production and distribution to date indicate that the demand is influenced by past experience and knowledge of species performance and end-uses. However, the demand

for new agroforestry species is growing quickly through extension and training efforts with farmers, schools and tree planting NGOs. Contact farmers have played a big role in influencing demand for tree species, especially *Calliandra calothyrsus* and *Leucaena leucocephala*. Species recommended for the Kisii highlands are given in Table 2.

Table 1:

Species normally produced and available at the Kisii Nursery

1. *Aberia caffra*
2. *Acacia albida*
3. *Acrocarpus fraxinifolius*
4. *Albizia gummifera*
5. *Araucaria cunninghamii*
6. *Balanites aegyptiaca*
7. *Calliandra calothyrsus*
8. *Cassia siamea*
9. *Cassia spectabilis*
10. *Casuarina equisetifolia*
11. *Cordia abyssinica*
12. *Croton megalocarpus*
13. *Cupressus lusitanica*
14. *Eriobotrya japonica*
15. *Erythrina abyssinica*
16. *Eucalyptus microcorys*
17. *Eucalyptus paniculata*
18. *Eucalyptus saligna*
19. *Fraxinus mexicana*
20. *Grevillea robusta*
21. *Leucaena leucocephala*
22. *Markhamia platycalyx*
23. *Melia azedarach*
24. *Millettia dura*
25. *Pinus patula*
26. *Psidium guajava*
27. *Pterogyne nitens*
28. *Schinus molle*
29. *Sesbania grandiflora*
30. *Spathodea nilotica*
31. *Sterculia acerifolia*
32. *Terminalia brownii*
33. *Tipuana tipu*
34. *Vitex keniensis*

Calliandra calothyrsus *a newly introduced multipurpose leguminous species now popular with farmers and tree planting groups.*

The nursery *at the Kisii Centre shows good management with both natural and artificial shade for effective water conservation.*

Table 2.

Tree Species Recommended for the Kisii Highlands

Horticultural Species

1. *Carica papaya* (Paw Paw)
2. *Citrus spp* (Oranges, etc.)
3. *Macadamia spp* (Macadamia Nut)
4. *Mangifera indica* (Mango)
5. *Morus alba* (Mulberry)
6. *Anacardium occidentalis* (Cashew Nut)
8. *Psidium guajava* (Guava)

Fodder/Multipurpose species:

1. *Calliandra calothyrsus*
2. *Cajanus cajan*
3. *Erythrina spp.*
4. *Flemingia conjesta*
5. *Gliricidia sepium*
6. *Leucaena leucocephala*
7. *Prosopis spp.*
8. *Sesbania grandiflora*
9. *Sesbania sesban*

Timber/Fuelwood Species

1. *Acacia spp.*
2. *Albizia spp.*
3. *Antiaris toxicaria*
4. *Brachylaena hutchinsii*
5. *Cassia siamea*
6. *Casuarina equisetifolia*
7. *Chlorophora excelsa*
8. *Cordia abyssinica*
9. *Eucalyptus spp.*
10. *Gmelina arborea*
11. *Grevillea robusta*
12. *Harungana madagascarensis*
13. *Jacaranda mimosifolia*
14. *Maesopsis eminii*
15. *Markhamia spp.*
16. *Mimosa scabrella*
7. *Ocotea usambarensis*
18. *Tamarindus indica*
19. *Vitex keniensis*
20. *Warburgia ugandensis*

The nursery programme will continue to produce a wide range of species to cater for different needs. The quantities produced for each will depend on demand. The programme is cataloguing technical information on seed and nursery management techniques inherent to indigenous tree species and those introduced and naturalized in the lake basin area. Individuals may purchase seedlings and budded citrus from the nursery at Ministry of Environment and Natural Resources and Ministry of Agriculture and Livestock Development prices. Organised groups (e.g. schools, institutions, churches, cooperatives and women self-help groups) may obtain some seedlings free of charge upon formal request to the Centre manager. The Centre can also provide transport for some

group requests. However, to overcome transport problems, the centre gives priority to helping small communities and groups to establish their own nurseries through its extension programme. The centre issues free seedlings during the National Tree Planting Day.

6.2 Seed Services and Seed Orchard

The Centre operates a strong seed programme through local seed collection. There is also seed exchange with other agroforestry centres and the Ministry of Environment and Natural Resources' Extension and Information Service in the region. Table 3 gives a list of some of the seeds available from the Centre. Table 4 is a further list of locally found tree species, their local names, seedling season and sites where seeds are collected. The seed programme is being expanded as the Central Seed Services Unit in Nairobi becomes fully operational and as the district extension programmes expand.

Table 3.

List of seeds normally available from the Centre

Acacia brevispica
Acacia gerrardii
Acacia mearnsii
Acacia nilotica
Acacia seyal
Acacia tortilis
Acrocarpus fraxinifolius
Azadirachta indica
Balanites aegyptiaca
Caesalpinia spinosa
Calliandra calothyrsus
Callitris robusta
Calodendrum capense
Cassia siamea
Casuarina equisetifolia
Combretum molle
Cordia abyssinica
Croton macrostachyus
Croton megalocarpus
Cupressus lusitanica
Delonix regia
Dovyalis caffra
Eriobotrya japonica
Eucalyptus citriodora
Eucalyptus globulus
Eucalyptus paniculata
Eucalyptus saligna
Fraxinus mexicana
Gmelina arborea
Grevillea robusta
Jacaranda mimosifolia
Leucaena leucocephala
Maesopsis eminii
Markhamia platycalyx
Melia azedarach
Millettia dura
Moringa oleifera
Pinus patula
Podocarpus gracilior
Schinus molle
Sesbania sesban
Sterculia acerifolia
Teclea nobilis
Terminalia brownii
Tipuana tipu
Vitex keniensis

Table 4.

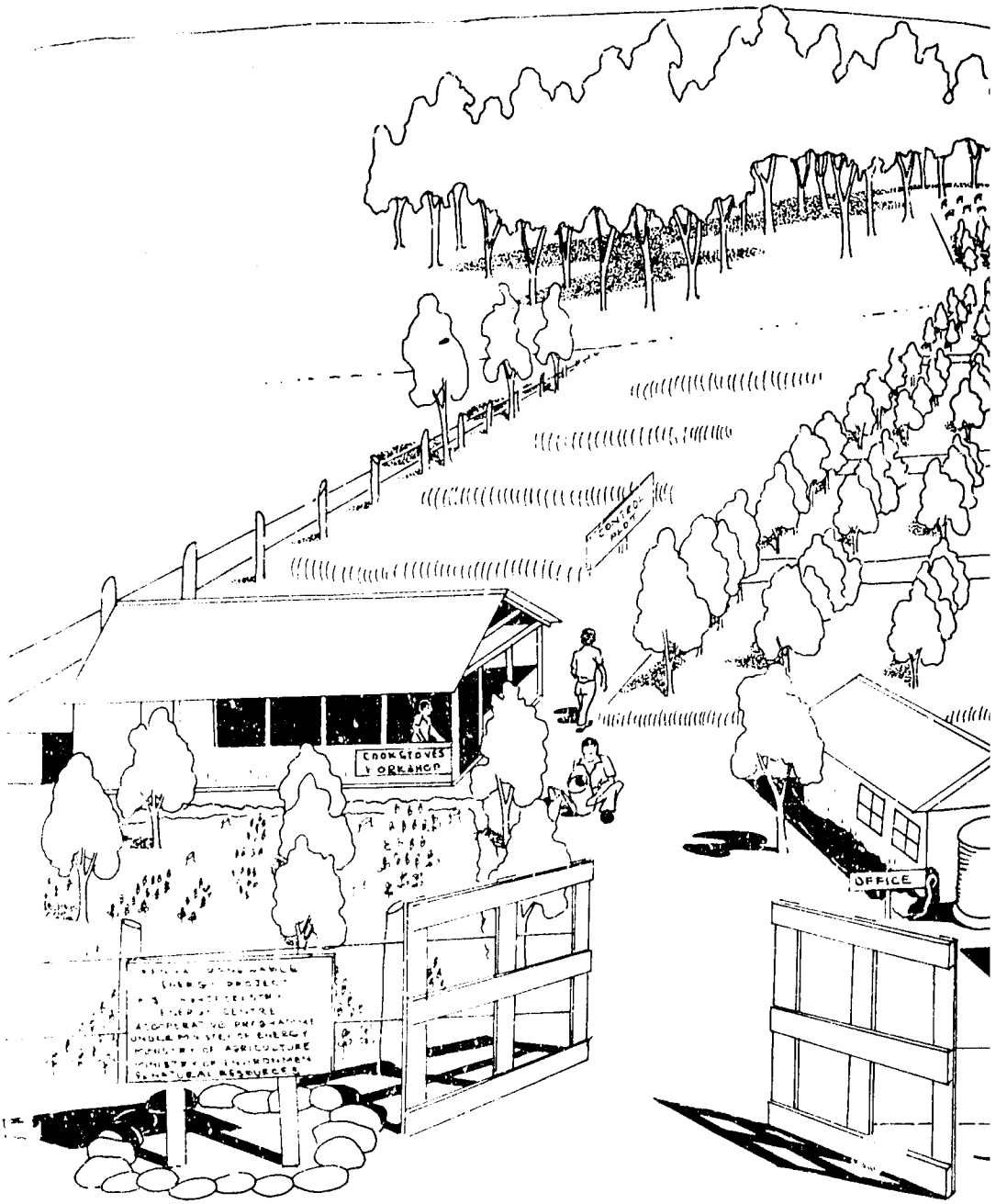
Local seeds collected by the Centre and when they are available

Species	Kisii Name	When Available	Location Found
Acacia abyssinica	Omoraa	May August	Kericho District
Acacia gerrardii	Omokonge	Dec. April	Kisumu/Kericho District
Acrocarpus fraxinifolius	Mutali	August	Kisii High School
Albizia gummifera	Omogojoro	May August	Kisii & S. Nyanza
Casuarina equisetifolia	Ebakora Enyerere	July August	Kisii Municipality (K.I.E.)
Cordia abyssinica	Imokoboko	July August	Kisii Municipaliy
Croton megalocarpus	Omosocho	August Sept.	Kisii District
Cupressus lusitanica	Ebakoro	Jan. Dec.	Kisii District
Erythrina abyssinica	Omotebe	August	Kisii F.T.C.
Eucalyptus saligna	Egumu	Jan. Dec.	Kisii District
Ficus natalensis	Omogumu	June July	Kisii Municipality
Ficus urceolaris	Omosenia	July	Kisii F.T.C.
Grevillea robusta	Omokabiri	Dec. May	Kisii Municipality
Jacaranda mimosifolia		Jan. Dec.	Kisii Municipality
Kigelia africana	Muratina	August	Manga
Maesopsis eminii		April June	Kisii Municipality
Markhamia platycalyx	Omuobo	Jan. April	Kisii District
Millettia dura	Omoburata	June July	Gestatara & Jogoo areas
Pinus patula	Omubunduki	July	Manga/Ndaranja Mbili
Sesbania sesban	Omosabisabi	Aug. Sept.	Nyanza Province
Terminalia brownii	Omoraa	Jan. April	Kendu Bay
Vernonia auriculifera	Omusabakwa	July	Kisii District

6.3 Agroforestry Research/Demonstration

Background: Potentials and Constraints of the Region

The Kisii highlands and Lake Basin Lowland regions are areas of varied environmental characteristics. As well, socio-economically, the area encompasses a diversity of socio-cultural settings, with a wide range in the distribution of wealth. There is generally a high standard of living in the tea zones. This gradually shifts to a more subsistence oriented


COOKSTOVES
WORKSHOP
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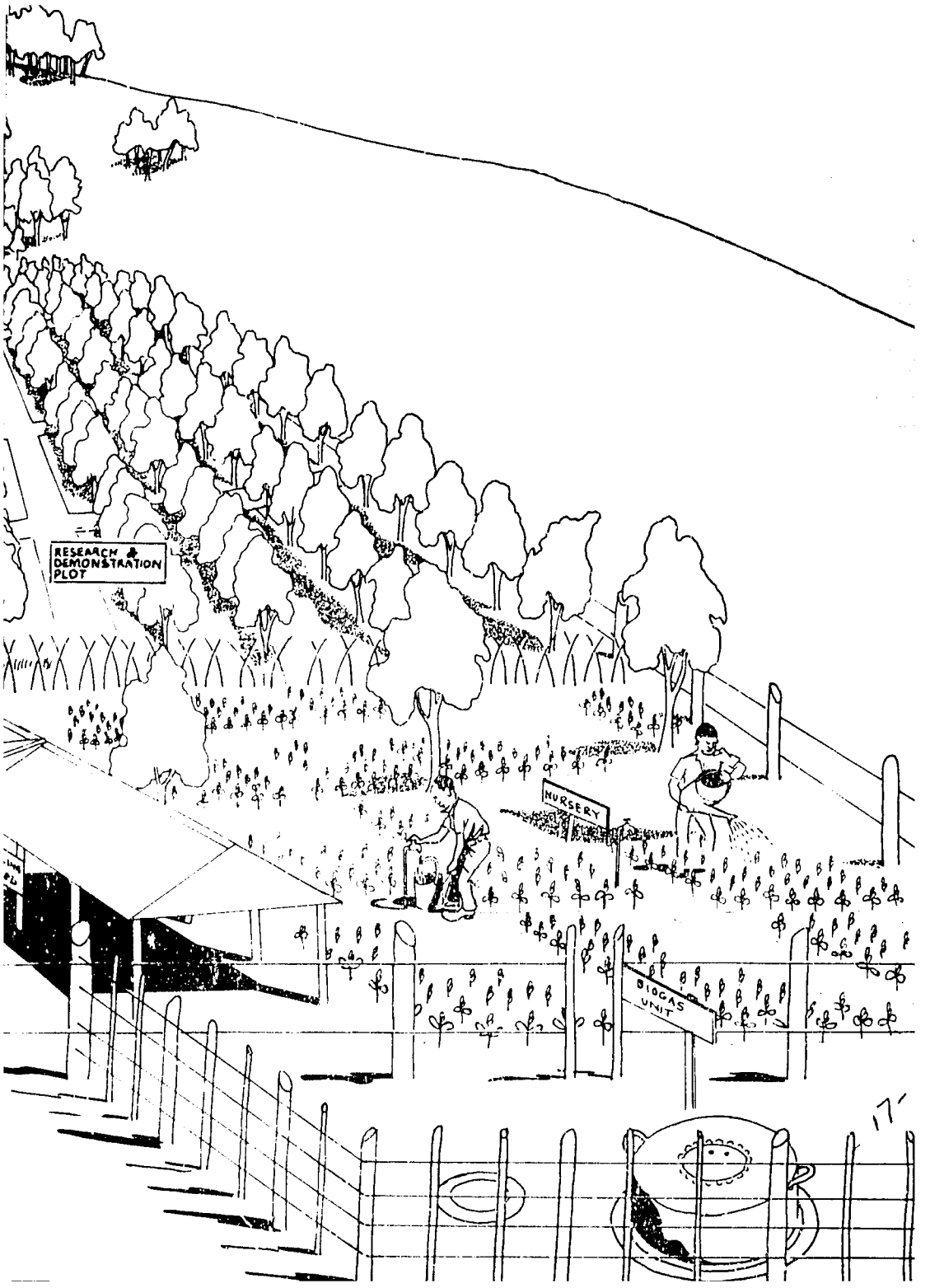

RESEARCH & DEMONSTRATION PLOT
NURSERY
BIOGAS UNIT

economy in the areas immediately around the lake where agricultural potential is low.

The research farms are located in the highlands, thus the results are most applicable there. Table 5 gives monthly figures for rainfall recorded around Kisii Town from 1982 to 1985. As can be seen in the table, the area tends to get rainfall throughout the year with an annual average of about 1800mm. The mean annual temperature in the area is 18-20°C. The soils around Kisii are dark reddish brown (mollisols), while in the Lake Basin, sandy and silty-sandy soils dominate.

The Lake Basin is very heavily populated, especially in the highlands. In some areas, land sub-division has resulted in very small farms, sometimes averaging as little as 0.7 hectares per family. The 1979 population census indicated a density of 392 persons per square kilometer. Today this figure is likely to be closer to 500. This high population level

Table 5.

Rainfall Data for Kisii Agroforestry/Energy Centre (mm)

Month/Year	1982	1983	1984	1985
January	92.7	108.3	52.8	145.8
February	109.5	91.6	44.9	97.6
March	81.2	200.5	51.8	199.1
April	309.2	205.0	214.3	374.0
May	228.5	178.8	129.0	296.3
June	157.7	83.4	173.2	135.5
July	61.4	138.2	158.5	196.4
August	199.7	178.6	140.6	150.1
September	52.2	163.1	94.1	185.3
October	227.1	336.9	147.5	136.8
November	273.1	227.8	279.5	170.9
December	120.2	77.1	115.3	61.1
Total	1,912.5	1,989.3	1,601.5	2,148.9

has resulted in high demands for woodfuels and other tree products.

Increased tree planting with and without crops is critical for the Lake Basin area. Trees are needed not only for their products (woodfuel, timber, etc), but for their service roles in overcoming problems of environmental and soil degradation. It is the objective of the Kisii Centre, in cooperation with other GOK agencies, NGOs and other tree planting groups to help conserve existing resources and to increase their productivity. The research at the Kisii Centre is critical in this effort as it supplies important information on the best species to be planted and on the best planting arrangements and technologies.

Description of the Agroforestry Research Programme:

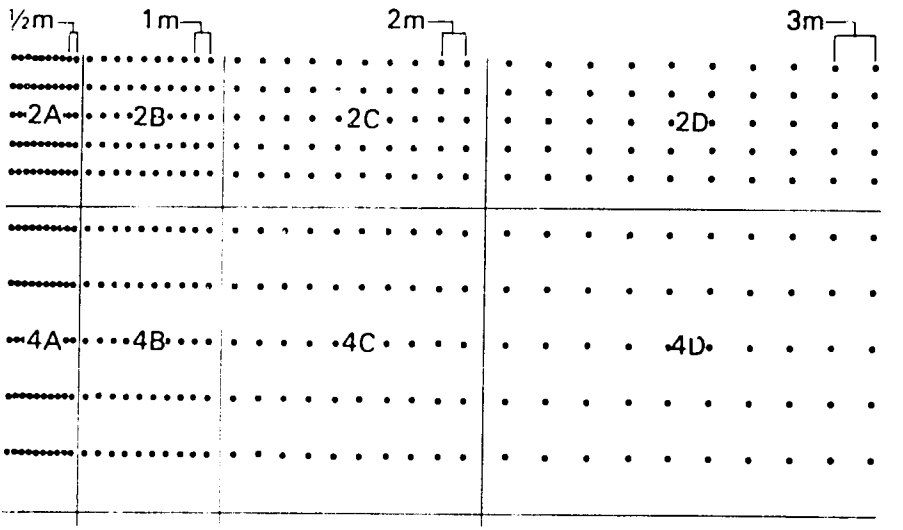
A 2 hectare research farm was established at the Kisii F.T.C. in 1983. The farm serves to generate biotechnical data on which agroforestry recommendations and technical packages for the extension programmes are based. As well, the farm is used for teaching and demonstration during training courses and for visitors to the Centre. The Centre is studying nine tree species for their agroforestry potential. These are:

Calliandra calothyrsus
Cassia siamea
Cordia abyssinica
Eucalyptus saligna
Grevillea robusta
Leucaena leucocephala
Maesopsis eminii
Markhamia platycalyx
Persea americana

The basic research design being used is illustrated in Figure 2. More details are given in Table 6 and 7 which indicate the planting arrangements and planting densities of the plots. The inter-row and intra-row spacings of the trees have been varied in order to determine the most effective tree planting arrangements with food crops. Each season the plots are intercropped with various agricultural crops in accordance with Ministry of Agriculture and Livestock Development recommendations.

The research/ demonstration farm *has 10 tree species trials. Measurements of both trees and crops are taken regularly.*

Figure 2. Layout of the Research/Demonstration Plots



Each '•' represents a tree. In each row there are 40 trees spaced as follows: 10 trees at ½ meter apart, 10 trees at 1 meter apart, 10 trees at 2 meters apart and 10 trees at 3 meters apart. After the first row there are 5 rows that are 2 meters apart and 5 rows that are 4 meters apart. This gives the 8 different planting arrangements, from very dense to very dispersed. The crops are planted based on the recommendation of the Ministry of Agriculture and Livestock Development, regardless of the tree presence.

Table 6.

Agroforestry Experimental Trials Planting Arrangement.

Row Width		Line Density			
		0.5m	1.0m	2.0m	3.0m
2m	Module	2A	2B	2C	2D
	Area per tree	1m²	2m²	4m²	6m²
4m	Module	4A	4B	4C	4D
	Area per tree	2m²	4m²	8m²	12m²

Table 7.

Agroforestry Experimental Trials Planting Densities

Area per tree	$1m^2$	$2m^2$	$4m^2$	$6m^2$	$8m^2$	$12m^2$
Number of trees per hectare	10,000	5,000	2,500	1,666	1,250	833
Modules	2A	2B 4A	2C 4B	2D	4C	4D

Extensive data are collected each season in order to establish a good data base with which to evaluate the modules. The major data being collected in the research/demonstration plots include:

1. Soil fertility (both chemical and physical analysis),
2. Weed pest disease monitoring,
3. Crop and crop residue yield,
4. Tree growth rates,
5. Soil and water conservation improvements,
6. Effects of different types of agroforestry management, and
7. Production cost (labour and other inputs).

6.4 Preliminary Results /Recommendations

The agroforestry experiments described above are already providing information and preliminary conclusions. The following are some of the general observations to date:

1. High tree seedling survival and growth rates, as well as better growth form and canopy shape are obtained by establishing trees in an agroforestry setting. Maize is recommended for the initial crop as it forces the trees to

grow slender and tall. Also, under agroforestry systems there is minimal tree management as the tree benefits from the agricultural practices given the crop (e.g., fertilization, weeding and pesticide application, etc).

2. Economic returns are likely to be higher in agroforestry systems than in pure agricultural systems. Marketable wood harvests (fuelwood, poles, fodder, fruits) are possible 2 years from transplanting (or even less) for some tree species.

3. All major tree commodity groups (horticulture, woodfuel/timber, fodder/browse) have performed well as illustrated by representative species in the experimental farm:

   Horticultural Species: *Persea americana* (avocado) had good establishment in the agroforestry systems. Intercropped maize yields have been high. Due to avocado's dense wide canopy wide planting arrangements for the trees are recommended.

   Woodfuel/Timber Species: There is a wide choice of trees in this category including those entered in the experiment. High yields have been obtained in only 2 years from fast growing species like *Eucalyptus saligna, Grevillea robusta* and *Cordia abyssinica.*

   Browse/Fodder Species: In this category, *Leucaena leucocephala, Calliandra calothyrsus* (and *Sesbania sesban* from traditional local experience) have given enhanced soil fertility, plentiful fodder and woodfuel, and biological weed control. These species appear to have great potential in agroforestry.

4. Experience to date indicates the need to recommend more than one tree/shrub species to farmers for their farms. It is recommended that they grow a mixture of species with judicial selection of planting sites (near the house, on terrace edges, on roadsides, farm boundaries, etc).

5. We also learn from the farmers through frequent follow-up visits for feedback. For example, one of our contact farmers found that in seasonally swampy bottom lands, *Calliandra* intercropped with Napier grass has a good

performance while *Leucaena* showed poor performance with yellowing of leaves, mottling and die back.

6. *Eucalyptus* and *Cassia siamea* showed bad effect to the crop. Hence it is desirable to grow them away from the crops such as on borders, next to roads, or in pure stands (woodlots).

7. The first major cutting (agroforestry management) of the tree/shrub species such as *Leucaena, Calliandra,* and *Sesbania* should not be carried out until the tree is well developed (2-3 meters tall). This allows the trees root system to become well developed and, as well, maximizes weed control, water conservation and biomass production. This size will normally be reached in one year. Once these species are established, maximum production from the system can be obtained by cutting the trees back during the cropping season and allowing them to grow between seasons.

8. The tree planting modules (see Table 6 and 7) to select for agroforestry systems depend on the type of trees being planted. For the fodder/browse species, high density ranges are recommended, namely 2A and 4A, that is 10,000 and 5,000 respectively. This is because these species show a positive interaction with crops. The planting arrangements recommended for horticultural or woodfuel/timber species, however, are wide spacings as the trees grow big and shade the crops. Such trees, if planted with crops, should be in rows which are oriented east-to-west in order to keep shade at a minimum.

6.5 Agroforestry Training, Extension and Technical Services:

Training:

Using the classrooms, dormitories and catering facilities and services of the F.T.C. the Centre offers agroforestry courses to GOK extension personnel, chiefs, farmers and local NGO leaders. These courses are normally one week long and cover all aspects of agroforestry. The courses are largely based on

the field programmes of the Centre. Topics covered include seed collection, processing and storage; nursery management and tree planting; soil and water conservation; research activities; and agroforestry theory and practice. Special training courses can be conducted upon request for self-help groups or other interested parties. The Centre also holds 2 hours of agroforestry training for trainees at regular F.T.C. courses.

Extension and Technical Services

This programme has recently been expanded by a Ministry of Agriculture and Livestock Development agreement for the District Soil and Water Conservation Officers to work closely with the Centre extension staff. This is further strengthened by the posting of United States Peace Corps Volunteers to serve as extension officers. The procurement and issue of motor cycles, bicycles and extension vehicles has also greatly improved extension activities in the target districts of South Nyanza, Kisumu, Kisii, Siaya and

Leucaena leucocephala *Research Plot. As can be seen in the picture, the maize grows strong and healthy when intercropped with* Leucaena.

Kericho. The extension services focus on individual contact farmers; selected schools, church groups and other organised groups.

The technical services available include seasonal distribution and supply of seeds and seedlings and on site technical advise and supervision during major planting time. Groups, farmers, students and NGOs are often given guided tours of the Centre programmes. The Centre also participates in the National Tree Planting Day and at the Kisii and Kisumu ASK shows. Printed extension information is being made available for district and local level training and extension efforts.

The Centre *operates extension and technical services as well as regular trainings to farmers NGOs and other organized groups. Here a group is visiting and being trained on nursery management.*

7. Biogas Programme

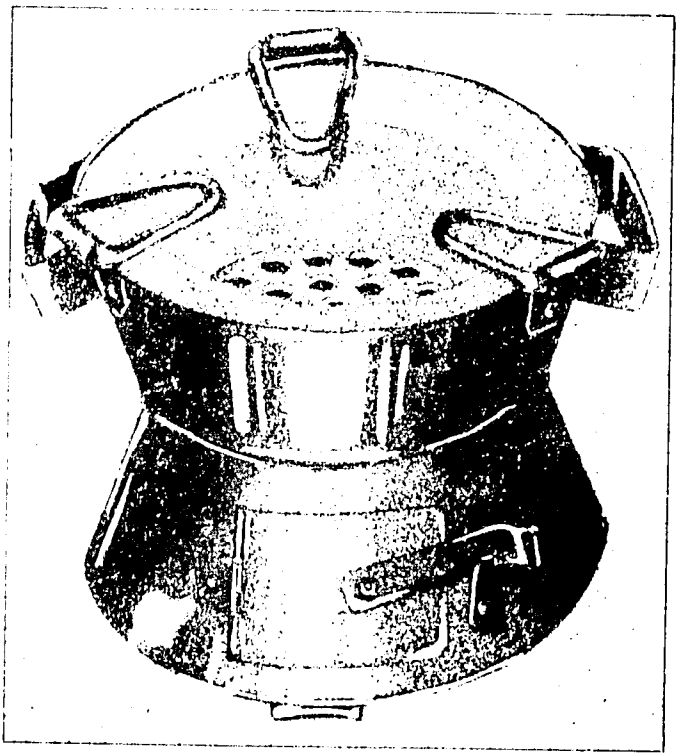
This activity is based at the Kisii F.T.C. where one training course was conducted during construction of the biogas unit now in operation. Biogas training and technical assistance will largely be through the Village Polytechnics and the Gusii Institute of Technology. The Centre programme will remain largely advisory and information dissemination.

The biogas unit at Kisii. *The unit has a 9.4m³ digester which produces enough gas to make 3 meals per day for a family of 8-13 persons and to provide lighting for the house during night time.*

8. Cookstoves Programme

The cookstoves (jikos) programme is involved in the promotion of improved cookstoves tehcnologies and in training artisans in the production of these new technologies. The Centre concentrates on training local artisans and Village Polytechnic teachers. The Centre itself is not involved in the commercial production of jikos.

The Centre also promotes improved woodstoves in collaboration with Maendeleo ya Wanawake and the G.T.Z. Special Energy Programme. The Centre serves as a display centre for improved woodstoves and other energy conservation methods (e.g., Haybox cookers). Courses are being given to disseminate these technologies to women's groups and other beneficiaries.



The Kenya Ceramic Jiko. *The Kenya Ceramic Jiko requires only half the charcoal that the traditional jiko uses. It therefore saves the user a considerable amount of money while at the same time reducing the demand for fuel wood.*

Kisii's Cookstove Workshop. *Pictured is the Kisii cookstove workshop. The workshop is used for training courses on the construction of ceramic lined charcoal and wood stoves.*

Cookstove Training: *The Centre regularly operates artisan training courses. Here a trainee is seen working on assembling an improved jiko.*

9 Staff

Centre Manager	— P.M. Makenzi
Centre Clerk	— William D. Okoth
Foreman	— Lawrence G. Kenyambi
Nursery Headman	— Pius M. Mageto
Storeman	— Richard C. Kebabe
Extension Officer	— Bob East PCV — South Nyanza
Extension Officer	— Laurie Lynn Kelly, PCV — Kisii
Extension Officer	— Jeff Klein, PCV — Siaya

Associated Staff

Mr. R.K. Siele	— F.T.C. Kisii
Mr. F.M. Odok	— D.A.O. Kisii
Mr. F. Kungu	— D.F.O. Kisii
Mr. Ambune	— D.F.O. Homa Bay
Mr. Njoroge Gakunyi	— D.S.C.O. Homa Bay
Mr. F.N. Maina	— D.S.C.O. Kisii

Group photograph
of Kisii Centre staff
— January, 1986

Map to the Kisii Agroforestry/Energy Centre