Report on Technology Exchange Programme

Social Forestry Extension Model Development Project (SOFEM)
and
Kilimanjaro Village Forestry Project (KVFP)

22nd - 26th February 1999

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Acknowledgement

First of all, all the Kenyan participants in technology exchange programme would like to extend sincere gratitude to the Japan International Cooperation Agency (JICA) who kindly organized and sponsored the programme.

Special thanks also goes to all those who contributed the papers to produce the report, and Rose MBITHI and Janet MUTUNGA who assisted in typing.

Last but not least, the Kenyan team would like to express our sincere thanks to the Tanzanian team for their warmest hospitality extended to us during our stay in Tanzania.

Lucas RATENG & Hiro MIYAZONO (Co-editor)

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1. Introduction

At the planting stages of SOFEM it was realized that exchange of information with other related projects was an important avenue in which our staff can benefit from experiences of ongoing rural tree planting activities especially in semi-arid areas. Both the SOFEM and Kilimanjaro Village Forestry Project (KVFP) in Tanzania are supported by JICA. The two projects have similar objectives to develop technologies for dryland farm forestry and disseminate the packages to farmers within the project area and other semi-arid areas. Thus the technical exchange tour was to enable staff from both projects exchange experiences in the project implementation process. Past visits and exchange of experiences have been of enormous benefit to staff from both countries in the implementation of their project activities. To exchange information on new developments SOFEM dispatched a team of 22 members of staff both Kenyan and Japanese Experts from 22nd - 26th Feb. 1999 to Same, Tanzania where KFVP is implementing its activities. Some discussion forums and guided field tours were conducted by the hosts within the project area.

The visit was very useful experience to project staff who were exposed to the challenges and opportunities in dryland forestry development thus building their know how and capacity in the implementation of their various activities. The team members were in agreement that the trip was very useful and more such exchanges, if possible could be considered in the future.

2. Socio-Economic and Environmental Conditions in Same District

General conditions of the project area

Same district is one of six districts in the Kilimanjaro Region (Province) situated to the South East of the region. Administratively the district is divided into six divisions and 24 wards with a total of 72 villages. The district covers 5,152sq. Km. and according to 1988 census the district had 30,012 house holds with a total population of 170,053 people. The district growth rate is 2.4% and the population projection for 1996 is 205,195.

Characteristically the district is divided into two topographical and geographical, physical features namely lowlands and highlands.

2.1 Lowlands

Covers the Western corridor of the district and climatically semi-arid. Also the small portion to the east that is humid, agricultural activities are undertaken supported by irrigation system. The Mkomazi Game reserve is situated to the North and Eastern part of the district where its undulating hills drims a natural habitat for the wild game.

2.2 Highlands

These covers the central mountain range (Chome/Shengena) of South Pare, it lies between 900m. and 1,300m. The forest covers 40% of the highlands and the remaining area has a potential for agricultural practice and zero grazing. The highlands in the South Pare are densely populated. The arable land has been reclaimed to a possible maximum extent with crops such as coffee and bananas.

In low lying area, scarce population is observed, with exception of town centre where the number is abit due to rural urban population migration.

Elevation strongly dictate the amount of rainfall per annum. Highlands averagely receive 600-1200mm and lowlands receive 350-600mm per annum. Crop farming dominates highlands and livestock production dominates the lowlands.

Temperature, range are determined by altitude. Highland minimum/maximum temperatures range from 18^0C - 28^0c, in the lowlands they range from 24^0C - 34^0C, this implies that while the highlands are cool with more reliable rainfall, the lowlands are characteristically dry with scanty rainfall.

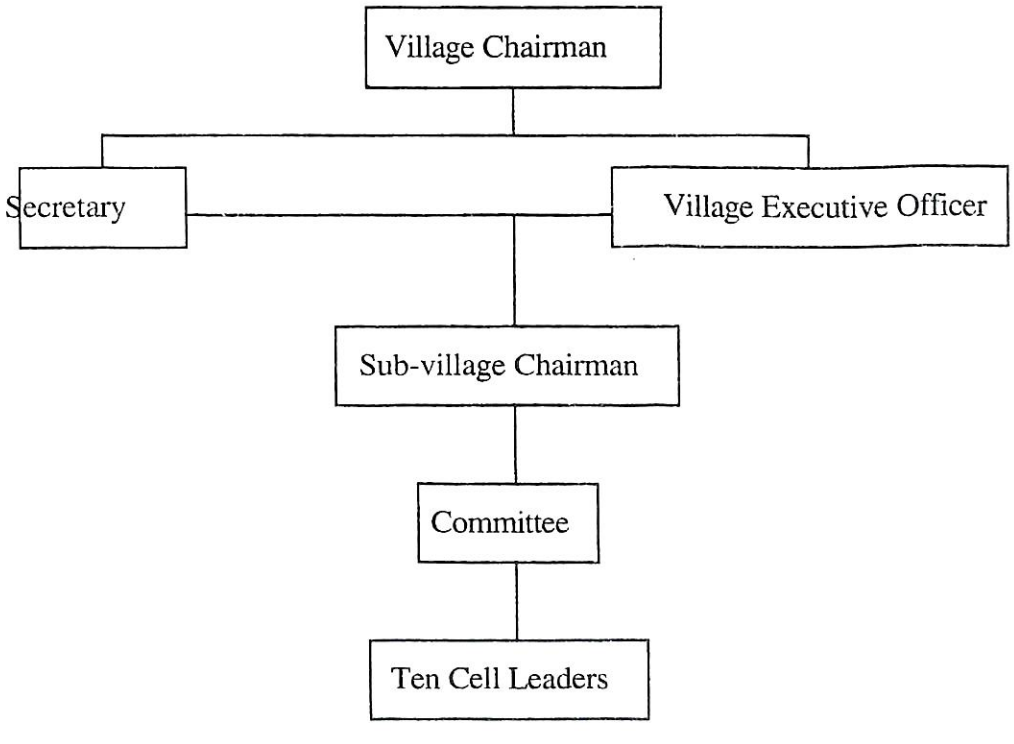
According to 1991 statistics, the Kilimanjaro Region GDP per capital at current price was T-Shs.12,612. However the district figure is below the regional average.

2.3 The People

As said earlier the population as per the 1998 census stood at 30,012 per household and totals to 170,053 people and the growth rate is 2.4%. The tribes in the district include:- Pare and Maasai as the leading tribes and Sambaa, Wasugua as minor tribes.

2.4 The Village Government

Typical Village Government Structure



2.4.1 Typical Committees

(1) Security Committee - Ensuring peace and harmony.

(2) Agricultural Committee - Deals with Agriculture requirements in the village.

(3) Development Planning and Economics - Responsible for formulating village development programmes and monitoring their implementation.

(4) Financial and Commercial Committee - Headed by village accountant, for proper village accounting in agriculture inputs, marketing, village shops milling machines and transportation.

2.4.2 Land Tenure System

In Tanzania land is public property, though there are some flexibility has permanent crops such as coffee can be the owner for 99 years, though not permanently.

2.5 Forest in Same District

Two types of forest resources are recoqnized in Tanzania, forest catchment reserve and forest reserve. Same district has three (3) catchment forest reserve and two more are proposed being proposed, Chomes, Chambogo, Koko are targeted for catchment forest reserve and secondly, Mwara Kwamuenda the proposed ones.

2.6 Economic Activities

Economically the district depends on subsistence agriculture and livestock keeping. About 43,000 hectares are under cultivation out of which 10% are under irrigation mainly in the eastern lowland where cotton, sisal, sugarcane, rice, maize and beans etc. are grown. The remaining 90% of the arable land is under grazing where the following animals get their feed; 100,060 cattle, 100,010 goats, 72,000 sheep and 6,500 donkeys (June 1995 statistics). The district is not well developed industrially, to date only light industries such as: cotton ginning, oil milling and ceramic industry are in the district. Along with the above industries there also exist few small scale industries such as lumbering, woodwork, light workshops that create employment and income generation.

Also people do some works like shoe making, shop stewards etc. for wages.

Generally the district is least developed compared to others in the region. With regard to social services, the following social service areas are found in the district:

- Secondary Schools	-	13
- Primary Schools	-	143
- Hospitals	-	2
- Health Centre	-	3
- Dispensaries	-	41

(Source of information : Same district planning officer)

Many development programmes and projects supported by NGO's and other donor agencies exist in the district and are co-ordinated at the district level government by the District Planning Officer

Apart from KVFP, there are three (3) development programmes which include tree planting components. The traditional irrigation improvement programme, the Same and Mwanga Environment Advisory Organization (SMEAO) and Tanzania Christian Refugee Service (TCRS). The above three (3) deals with agroforestry as a common activity among others.

3. Kilimanjaro Village Forestry Project Brief

In its follow up phase, the Kilimanjaro Village Forestry Project (KVFP) is engaged in three main activities.

- Nursery Activities
- Silvicultural Activities
- Extension Activities

3.1 Nursery Activities

Out of the target 38,000 seedlings production target for January of 1998, the project managed to produce 26,308 seedlings. The reason for reduced production was the need to recognize people's initiatives. The gap left was easily filled by Nursery operated by the local communities on self help basis.

Out of the 26,308 seedlings produced, 17,113 seedlings were distributed. Priority was given to areas which had greater difficulties raising their own seedlings. The other seedlings were used in enrichment planting, while some are awaiting distribution with the onset of rains. Otherwise, the emphasis is on the people being able to raise their own seedlings on their farms.

The project is also in the process of raising fruit tree species such as mangoes, oranges and lemons. Nursery activities include providing small scale nursery operators with technical advice. At the same time, indigenous knowledge is gathered and experimented verified in the technology development activities.

The seedlings so far raised are of *Azadirachta indica, Acacia tortilis, Acacia senegal, Croton megalocapus, Senna siamea, Leucaena leucocephala, Parkinsonia aculeata, Tamarindus indica, peltophorum pterocarpum, Acacia drepanolobuim* and *Albizia lebbeck.*

3.2 Silvicultural Activities

The project headquarters covers an area of 520 ha, and 5 ha have been fenced off comprises Central Nursery, Meteorological Station and office facilities. The outer flank in the North is composed of a regenerated natural forest which acts as a natural conservation unit.

Core activities are:

- Establishment of a demonstration pilot forest.
- Development of appropriate planting and tending techniques based on indigenous knowledge.
- Root development influenced by planting methods forms on important point of study in the project. Indigenous knowledge leans towards the view that direct sowing of seed produces better results. The project has previously encouraged potting of seedlings for ease of protection. Both the project and indigenous people have sound arguments but it is still early to draw conclusions.
- In order to draw popular support, the project aims to draw on people's interest in the joint management and improvement of natural forests. This, it is hoped, will minimise the possibility of future conflicts.
- The project is also engaged in the management and development of *Moringa oleifera* as an important commercial and multipurpose species. Response from the Pare Community is enthusiastic. Demand for the seed in Arusha is also growing. Studies in the growth and general performance of the *Moringa* are going on.

3.2.1 Arboretum

The project arboretum at Mkonga site contains more than 23 different tree species mainly for observation purposes. The species here include:- *Leucaena lencophala, Jacaranda mimosifolia, Acacia nilotica, Albizia lebbeck, Acacia polyacantha, Sesbania sesban, Parkinsonia aculeata, Faidherbia albida, Peltophorum ptercarpum, Tamarindus indica, Acacia senegal, Eucalyptus saligna, Delonix regia, Senna siamea, Acacia tortilis, Azadirachta indica, Croton megalocarpus, Casuarina equisetifolia, Melia azadirachta, Senna spectabilis, Grivellea robusta, Eucalyptus camaldulensis* and *Acacia drepanolobium* among others.

It was observed that to reduce competition for ground moisture and hence stress intensive weed control could enhance the performance of some of the species particularly *S. siamea.*

3.2.2 Protection and Management of Natural Vegetation

Since project inception there has been remarkable improvement of existing natural vegetation within the 500 ha. Reserved project land. In an effort to encourage quicker regeneration of fallen natural tree seed, a technique referred to as "scratch planting" is under trial which, if proves positive, could enhance future re-afforestation efforts not only in the area but also in other ecologically similar regions.

3.2.3 Constraints

However, a few problem have been experienced recently i.e. fire out breaks and encroachment mainly by grazers.

3.2.4 Countermeasures

A number of firebreaks have since been established within the forest. The project is contemplating on the introduction of restricted grazing areas within the reserved forest in order to limit the degree of damage. It would be important to consider the establishment of sustainable management regimes taking into consideration the importance of existing local/traditional knowledge on range land management.

3.2.5 Trial Plots

These are mainly meant for species screening to determine the most promising tree species in the semi-arid climatic zone.

So far up to 40 tree species have been tried and preliminary results indicate the following species as suitable:- *A. indica, A. tortilis, A. senegal, C. megalocarpus, S. siamea, L. leucocephala, P. aculeata, T. indica, P. pterocarpum, A. drepanolopium* and *A. lebbeck.*

Other trial plots have been established on-farm. One such plot was set-up in Njoro village to determine the viability of planting methods i.e. direct saving Vs potted seedlings

3.2.6 Fuelwood Plots

The project has established a number of demonstration plots targeting species with potential for fuelwood production. Some of the species under trial include:- *Acacia polyacantha* and *Azadirachta indica.*

3.2.7 Observations

Experience with *A. polyacantha* in Kenya (Kitui) show that the species initially depicts very encouraging growth and survival results only to change after 3-6 years. The Mkonga plots therefore require very close observation to verify the above. This is important in order to ensure optimum utilisation of tree products before its "silvicultural" rotation age.

3.3 Extension Activities

As the project draws towards its conclusion, a lot of emphasis has been put on training and equipping of extension officers and extension agents. Participatory approach to extension is the most favoured by the project.

Whereas 10,739 seedlings were distributed tree in the previous year in low lying regions due to extreme weather conditions, setting up of community nurseries which sale their seedlings so far over 100 small scale nurseries have been established and are doing well. Participatory Rural Appraisal has been carried out in 6 villages. The programme is set to continue to cover the whole district.

School programme approach is an important component of extension. Unfortunately, forestry is not an examinable subject and this makes it difficult for the project to access all schools. The subject is covered under Environmental Education. So far, the project is engaged in developing educational material and conducting seminars and training for teachers involved in teaching the subject. As part of extension, the project

produces brochures, calendar and is currently involved in the preparation of various manuals for farmers, extension officers and teachers.

Gender sensitivity is taken very seriously and the project has employed a Gender Officer. Currently the project is developing a Gender-Sensitive Handbook that will be distributed along other publications.

4.0 KVFP Field Visit Observation

4.1.1 Arboretum

This is an area of 3.96 (ha) located near the project offices. A total of 23 species have been tried at a spacing of 3 x 3 metres with hole size of 40 x 40 cm. The objective of the plot are three fold:

(i) Demonstrate different tree species for community sensitisation.

(ii) Act as species screening area.

(iii) Future seed source. Several water harvesting structures are tried i.e. the V, O, W and U. Rehabilitation of the catchments or construction of trench could improve the performance.

4.1.2 Fuelwood Demo. Plot

Observed a 1995 *Acacia polyacantha* plot covering an area of 0.89 (ha) at a spacing of 2.5 x 2.5. Observation shows that with proper management i.e land preparation, weeding etc. the species could be a good source of firewood production at an early stage.

4.1.3 Experimental Plot

Objective: To compare the growth between direct and potted seedlings.

This is established within a communal land. Species under investigation is *Senna siamea*. Four seeds per hole were directly sown. Observation, indicates that the performance of the direct and potted seedlings in terms of growth is more or less the same. Direct sown seemed to develop a good rooting system at an early stage hence increase the chance of high survival during drought. Intensive experimentation on the same technique should be conducted on other species. This could reduce the task or cost of tree establishment especially for farmers.

4.1.4 Masandare Sub-Village

The sub-village is one of the twelve sub-villages of Kwakoko village in Same Ward and has 200 households. The sub-village is defined by natural boundaries i.e. valley and hills. Climatically the sub-village is very dry (semi-arid type).

Main economic activities of the village:

(i) Live stock keeping - main activity

(ii) Agriculture - secondary activities

4.1.4.1Visit Masandare Primary School

The school was started in 1972, the classes are from standard one upto seven. It was incorporated in tree planting activities of the project during the follow-up phase, nursery activities started in May,1998 with a production of over 1000 seedlings. Assistance from the project included seeds, potting tubes (re-usable), watering cans and technical advice.

The seedlings from the nursery are disposed through planting. At the nursery stock of seedlings were 82. The species included *Moringa oleifera, Delonix regia* and *Croton megalocarpus*. Survival in the field is quite low due to the harsh climatical condition. Intensive tending through use of micro-catchment, bottle feeding, shading etc. is highly recommended.

4.1.4.2Masandare Sub-Village Environmental Committee

The committee deals with all activities related to environmental issues. The committee was established in November 1996 and is comprised of eleven (11) members. A woodlot demo. Plot of an area of 1.04 ha. was established around the village dispensary and managed by the committee. Species planted are *Senna siamea* and *Azadirachta indica.* The seedlings were provided by the project according to the committee's choice. Through working together phenomenon "Msaragambo" weeding, watering etc. are done. Surface flooding is done which is not so effective due to the harsh climatical condition. Bottle feeding or pipes and incorporation of micro-catchment could be tried.

The KVFP has assisted the sub-village on construction of water reservoir of $8m^3$ capacity for watering the seedlings at the demonstration plot. Most of the materials were provided by the project while the villagers provided the artisans. Within the same area, an improved stove demonstration is done for the purpose of extending the knowledge to the villagers.

General problems facing tree planting activities in Masandare sub-village includes:

- Water scarcity/drought
- Termite attack
- Livestock browsing

4.1.5 Makanya Area

In this area, the KVFP collaborates with 2 groups in tree planting activity i.e. Tausi Women Group and Kikundi Cha Mwangaza (Kimwama).

4.1.5.1 Kikundi Cha Mwangaza Makanya (Kimwama)

The group which has a total of 15 members (10 female and 5 males) participating in tree nursery and group woodlot establishment. The activities were started in 1996. The group has established the woodlot in an area of 5ha. with the purpose of environmental conservation, firewood production and bee foraging. In 1997 and 1998 they planted 1300 and 890 seedlings respectively.

All seedlings were supplied by the KVFP, species planted includes:- *Senna spectabilis, Leucaena diversifolia, Tamarindus indica, Moringa oleifera and Albizia lebbeck.* A good number were still surviving though the general health and growth not impressive. This could be attributed to the harsh conditions in the area.

Bottle feeding and micro-catchment on some few trees were observed. This should be intensified by using plastic bottle and inserted under ground and construction of strong embankment around the catchments. The group has done land preparation for direct seeding of *Moringa oleifera* for the coming season. The problems experienced in the activity are drought and lack of enough seedlings.

The group's tree nursery is located at one of the members home. The activity was started in 1997/98 with a production of 2000 seedlings. This year, only 200 seedlings were still surviving. The species include:- *Senna siamea, Moringa oleifera and Azadirachta indica.* Potting mixers ratio used is 2:2:5 forest soil sand and manure respectively. Polytubes are commonly used as the potting material. It is recommended that the group be encouraged to utilize the locally available materials i.e. milk packets and tins for sustainability purpose at the end of the project. The group should also be encouraged to raise a reasonable number of seedlings in order to fully satisfy their needs. Commercial tree/flowers to be encouraged for income generation.

4.1.5.2Tausi Women Group

This is a purely women group with 9 members. The group was in co-operated in JICA activities in 1996. They have a tree nursery located at one of the members compound. The production in the year 1995/96 were 300 seedlings, 1996/97-700, 1997/98 - 800. This year's work is on-going with bougainvillaea cuttings and sowing of *Azadirachta indica.* They are intending to raise about 600 seedlings this year. The group need to be encouraged to raise more for commercial and domestic purpose. Utilization of local materials should also be emphasised. The group is also managing a woodlot of *Senna siamea* planted in 1992 at one of the members land for the purpose of firewood and construction poles. Observation shows that with proper management of *Senna siamea,* it can be a very good source of firewood and poles.

The group is also involved in construction of wood saving stores, 2 types were observed in one of the members home i.e the Kuni Mbili Jiko and another which utilises saw dust. Some members of the group have constructed improved jikos freely to their fellow members and non-members at a fee of T/Kshs.1,500.00.

Major problems experienced by the group are severe drought, lack of permanent water supply and nursery tools especially watering cans.

4.2 Visit To A Training Session

The training session was conducted in Kisiwani location. The first session of the training was held in Kisiwani Primary School and eight farmers attended as per attached

photo 1. The second training session was held at Kisiwani Secondary School with a total attendance of sixteen farmers. These training sessions are facilitated by the project staff.

4.2.1 Training Objective

The course was to equip the farmers with knowledge and skills on the environmental conservation and tree planting activities and to enable them transfer the acquired knowledge to their respective sub-villages.

4.2.2 Targets

The project targets farmers from eight sub-villages and each sub-village, is suppose to nominate two persons to attend the course considering gender aspects.

4.2.3 Course Duration

The course is normally conducted for 3 days, and it involves theory on the first day, practicals are for the second day and tree planting activities in the last day. On completion of the course, the participants are awarded with certificates. The project also provides the participants with tools to enable them start their own small-scale nurseries and tree planting activities in their respective sub-villages, attached see photo 2.

4.2.4 Training Sessions

The training course participants are issued with handbook developed by the project covering the whole course content. The course covers environmental conservation, seed collection and handling, seed pre-treatment, establishment of small-scale nurseries, tree planting and tending techniques, tree management.

The participants also have an opportunity to learn about the village forest by-laws. Finally at the end of their training course the participants are expected to act as extension agents and train communities in sub-villages as environmental conservation and tree planting activities.

4.2.5 Course Expectations

After the training course the participants will develop a plan of action on tree planting and environmental conservation. They are also expected to take a leading role on the environmental issues in their respective sub-villages.

In Same men and women decide on the trees to be planted in their farms depending on the purpose of the tree. Participants selection is done as planned considering gender aspect and incase there are more people then selection by voting take place, inorder to elect two farmers.

4.3 Kohawa Women Group Small-Scale Nursery

Objective: Raise seedlings for the group members and the community as to create awareness on tree planting activities.

The group nursery was established in 1998. The group has many members and other centres located elsewhere dealing with many other development projects. The other development projects being undertaken by the women group includes ploughing, livestock, tree planting, health, water tank construction and education project. Most of their activities are non-profit making, but a vital uplifting their living standards of its members and the country as a whole.

One of the group members informed the visiting training team that the main reasons for issuing free tree seedlings to the community was to mobilise them on tree planting activities and also to create awareness on the importance of trees in their daily life. Also she informed the team that in future after achieving their above objective, then they may start selling tree seedlings to sustain their activities, but at the moment the group meets all the operational costs of their small-scale nursery.

4.4 Constraints To The Group

- Termite
- Water shortage
- Withdrawn of other group members

5. Conclusion

The KFVP covers an area with diverse climatic and socio-economic/cultural conditions in their extension activities. Land use variation ranges from multi-storey agroforestry systems involving such crops as bananas, maize and various tree crops such as *eucalyptus* in Pare mountain ranges, rice, maize and various tree crops in the irrigation lowlands to pastoralism in the Maasai steppes. The socio-economic conditions vary from sedentary intensive agricultural system of the Pare people based on food and cash cropping in the highlands to livestock based systems of the Maasai in the lowlands. These variation calls for different approaches in the development and packaging of forestry technologies which are sensitive to the socio-economic-cultural conditions of the target groups and varied climatic conditions with associated constraints.

In the research and development activities there are similarities between the SOFEM and KFVP activities in the development of counter measures to constraints to tree planting in semi-arid areas which only differ in scale. Exchange of ideas in the earlier visit by our staff to the project area and return visit to Kitui in 1996 have almost eliminated the technical gaps between the two projects in addressing moisture deficits and termite problems. The trial plantations and experiments are showing good response the intensive management and may need further verification under farm conditions to gauge its potential adoption by local farmers.

KVFP project gave SOFEM staff an experience of the varied climatic, land use and social conditions of the Kilimanjaro project thus providing more challenges to both technology development and extension staff. KVFP extension activities have the opportunity of using the organized village structure which is absent in Kenya to reach more farmers and empower the village itself sustain the campaign beyond project life. KVFP have done a lot in development of extension materials such as manuals, brochures, calendars etc. and training of extension agents at the village level to ensure the sustainability of forestry activities into the future. On the technical level, he ability of the natural woodland to regenerate into climax vegetation within a span of less than 40 years and success of the indigenous knowledge of direct sowing by farmers were some of the few resilient observations which were acknowledged by our staff. Our staff offered some technical tips on management and utilization of some utility species such as *Melia volkensii* which is an important dryland timber species very popular with farmers in Kenya and many years experiences with *Acacia polyacantha*.

Appendix 1

Questions and Answers during the Discussion and Field Visit

Q: *What are the main problems for KVFP and how do they solve them?*

A : KVFP faces the following problems in tree planting:

- Drought (rainfall sometimes is below 200mm)
- Over grazing
- Forest fires.

To solve some of the problems the project usually have meetings with the villagers and discuss with them some by-laws which do not affect their traditional ways of living like, grazing to be reduced to stop fire breaks and be allowed to graze using permits for a certain period.

Other problems which are faced by farmers are solved by conducting PRA whereby they identify and rank them and the ones not concerned with forest activities, are forwarded to other relevant offices in the district for action.

Q : *What are the criteria used in selecting the targets?*

A : KVFP support 6 model villagers and all schools selected according to agro-climatical zones. The project don't have a certain criteria of selection. The community form the groups and make request to the project whereby they come in and assist them with material support and technical packages concerning tree planting.

Q : *How is the overall success of the project?*

A : KVFP has succeeded in tree planting, because the Pares have planted some woodlots for timber and the Maasai who are livestock keepers, have appreciated and wherever they settle they plant trees and nowadays they protect the cutting of the Acacia species which they use for fodder and shade for their animals.

Q : *Is the project sustainable?*

A : To ensure the sustainability of the project, the project have trained the villagers to act as extension agents. The project involve the local authorities in the selection.

Villagers are also trained on management of natural woodlots and inco-operate other departments during training.

Q : *How is the gender sensitivity affecting the project?*

A : Gender issues are also affecting the project whereby men are more active than women. This is brought by ownership of properties which discourage the women from full participation. To solve this the project mobilize women groups and all trainings involve a man and a woman.

Q : *What are the future objectives of the project?*

A : The future objectives of the project is that the activities carried out by the project be replicated to other arid areas. One proposal is that after handing over the project activities to DFO's Office, Same will become a training Centre whereby participants can be drawn from other departments.

Q : *What was the impact on seedling distributed?*

A : The impact on seedling distribution could not be recorded because the activity was scattered district wide and it was not easy to do follow-ups.

Q : *What was the objective of starting small scale nursery?*

A : The objective of starting small scale nurseries was to bring forestry knowledge to the people and reduce dependency on the central nursery.

Q : *Why are the groups not using local materials and distributing free seedlings?*

A : The groups visited can afford the polytubes as they were doing cost sharing. Other nurseries produced seedling and issued freely because they wanted to create awareness to the people on tree planting and later they sell to them.

Q : *How is the development in forestry sector organized in Tanzania?*

A : Development in Tanzania is organized by use of the top down approach whereby they solve problems which are not according to the communities priority. But since they are using PRA in extension, they have to change the policy to down-top.

Q : *What are the methodologies used for monitoring and evaluation?*

A : Monitoring and evaluation is done by the staffs themselves, then external evaluators comes and access the project achievements.

Q : *What is the impact of the project to the villages?*

A : The impact of the project to the villagers is that, they have been interested in tree planting because the number of small scale nurseries has gone up the demand to buy seedlings is very high. There is also the project implementation committee whereby everybody is accountable and the community is involved from the beginning.

The Project tries to make sure the community does most of the activities like re-generation by land-scratching and protecting it to avoid disturbances. They also scratch an area and leave it bare so that seeds fall and when rains come, they germinate. An area which had been planted with sisal about 30 years ago, has been changed to a forest.

Q : *Are the people adapting indigenous fruits?*

A : Adaptability of indigenous fruits is that most of the people do not prefer them, though they have been advised (Tamarindus indica and Zyzygium). But they want the grafted mangoes and budded citrus. They are advised on how to obtain the seeds and left to continue on their own.

Q : *What is the key point for the project to prepare the manuals?*

A : The strategy used in preparation of manuals is that they use few illustrations but explaining why such techniques should be used.

Q : *How did the project develop technologies with the people?*

A : The Project has developed some technologies with the people like, direct planting instead of pot planting. Due to water shortage they recommend few seedlings which they can take care of other than woodlots.
Video shows were conducted on request by the villagers but now they don't show.

Q : *Participation of the Maasai's in tree planting activities in both Kenya and Tanzania since they are pastoralists.*

A : They still plant trees in Kenya and Mr. Cheboiwo quoted a Maasai in Kenya who worn an environmental conservation award. In the past they used to observe their traditions and cultures but they have changed. Conservation of the environment is a task for all though in tree planting. It is rarely seen but the Maasai in Tanzania wherever they settle, they plant trees.

Appendix 2

Reference Materials Collected

1. Printed project working papers with the following titles:

- Follow up works on small scale nurseries of Nov. 1986 (By Extension Section).
- Experimental planting of open rooted seedlings in same low lands (Jan. 197). (By Silviculture Section).
- *Dovyalis caffra* propagation by cuttings. Dec. 1996 (Nursery Section)
- Tree growth and survival rate in Mkonga Arboretum (interim report of species selection trial) March 1997
  (Silviculture Section).
- Follow up survey of small scale tree nurseries April 1997 (Extension Section, District Forest Office, Same).
- Introduction of participatory approach in KVFP, Extension strategy. March 1997. (Extension Section).
- Trial on compost making at Mkonga nursery - Jan. 1997 (Nursery Section).
- Reaction of community on pricking of seedlings - Oct. 1997 (Extension Section).
- Possibility of the use of red soil for nursery soil mixture in same low lands - Jan. 1997 (Nursery Section).
- Problems found in initial stage of PRA practicals. Findings and recommendations - Oct. 1997. (Naoto Noda - Extension Advisor).
- Reports of Survey on Mlimbiko. A traditional resource management system in pastoral pare societies - Aug. 1996. (E, Maenda, J. Butuyuyu, D. Mkomwa, M. Mrutu, N. Noda)
- Analysis of selected Gender Aspects for Kirinjiko Chini Villagers - May 1997. (Rehema L. Mwateba - Independent Consultant).
- Experiments on hole sizes for tree planting in semi-arid areas - Nov. 1997. (Silviculture Section).
- Improved stove in Masendare sub-village - Dec. 1997. (Extension Section).
- Moisture condition, physical and chemical properties of pot soils in Mkonga Nursery - Dec. 1996. (M. Araki - Short term consultant in soil science).
- Interim Evaluation of participatory approach - Sept. 1997 (Extension Section).

2. Other materials include - Brochures:-

- Books/literature reading materials
- Project Calendars
- Project T-shirts
- Project Maps
- Manuals for - farmers, Extension Officers, Teachers, etc.
- Handouts

Appendix 3

List of Participants

1. KEFRI-Kitui

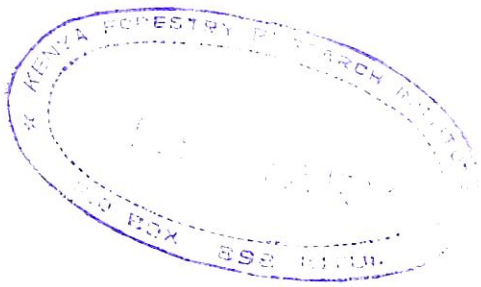
Centre Director	Mr. Joshua K. Cheboiwo
Farm Forest Extension	Mr. Ali Atanas
Farm Forest Extension	Ms. Damaris Munyao
On-station	Mr. Samuel Auka
M/INF	Mr. Lucas Rateng
On-station	Mr. Ezekiel Kyalo
Assistant	Mr. M. J. Otieno

2. FD-Kitui

DFO-Kitui	Mr. A. M. Gondo
DFEO-Chuluni	Mr. P. M. Kyenze
ADFEO-Chuluni	Mr. S. N. Musee
DFEO-Central	Mr. P. N. Nyabuti
ADFEO-Central	Mr. E. D. Oyugi
ADFEO-Kabati	Mr. J. S. William

3. KEFRI-HQs

Information	Mr. P. R. Barasa
Coordinator	Mr. B. Owuor
Information	Ms. Winnie Nguyu



4. FD-HQs

Project Manager	Mr. John K. Mbaya
Information	Mr. Chomba Charles

5. JICA

Farm Forest Extension	Mr. Hiro Miyazono
On-farm	Mr. Nozomu Hayashi
M/INF	Ms. Hiromi Yamauchi

Appendix 4

Itinerary

(Mon) 22 Feb 99		
	15:00	Depart Nairobi
	18:00	Arrive Namanga
	20:00	Arrive Arusha
	21:00	Arrive Moshi
(Tue) 23 Feb 99		
	Morning	Travel Moshi - Same (Briefing on KVFP's Activities at Project HQs)
	Afternoon	Field visit (Mkonga Site and Njoro Village)
(Wed) 24 Feb 99		
	Morning	Group 1 : Field visit (Masandare) Group 2 : Visit Training Session (Kisiwani)
	Afternoon	Group 1 : Field visit (Makanya) Group 2 : Visit Woman's Group (Kisiwani)
(Thu) 25 Feb 99		
	Morning	Wrap-up Meeting at KVFP HQs
	Afternoon	Visit TFAP (Mwanga)
(Fri) 26 Feb 99		
	8:00	Leave Same for Kenya
	16:00	Arrive Nairobi
	18:00	Arrive Kitui

Appendix 5

KILIMANJARO VILLAGE FORESTRY PROGRAMME (KVFP)

Officers met

	Name	Title
1.	Joseph M. Butuyuyu	Ag. Project Manager
2.	Leonard O. Chegere	Adminstration Officer
3.	Mathias Makupa	Head of Extension Section
4.	Mtama Siuhi	Ass. Head of Silviculture Sec.
5.	Simon Kitunga	Ass. Forest Officer Sil. Section
6.	David Mukomwa	Ass. Forest Offcier Extension Sec.
7.	Dorothy Mwanga (Ms)	Ass. Forest Officer Extension Sec.
8.	Raphia Koshuma (Ms)	Gender Officer, Extension Section
9.	Naoto Noda	Team Leader (Project Adviser - JICA)
10.	Yukiko Maki (Ms)	Coodinator & Extension Advisor
11.	Mr J. C. Mboya	DFO, Same

MASANDARE ENVIRONMENTAL COMMITTEE

12.	Thomas Ngwelema	Head of the Village
13.	Lawrence Mgenyi	Chairman Environmental Committee
14.	Mr Matunda	Committee member

MASANDARE PRIMARY SCHOOL

15.	Mr Musange	Headmaster of the School
16.	Mr Mrutu	Incharge of the Tree Planting in the school

WOMEN GROUP

TAUSI GROUP

17.	Karim Mshimo	Mtendajikata : Organizer
18.	Asha Kuku	Mweka hazina : Treasurer
19.	Esther White	Kivinjiko: Secretary

KIMWAMA GROUP (Kikundi cha Mwangaza) Names withheld

20.	Dr Fungamesa	Agronomist - Advisor to Tanzania Forestry Development Project, Kilimanjaro region.
21.	Margaret Shirima	Community Development Offcier,Kilimanjaro Region.

Photographs taken during the technical information exchange programme between SOFEM and KVFP in Tanzania

Photo 1. Project office compound.

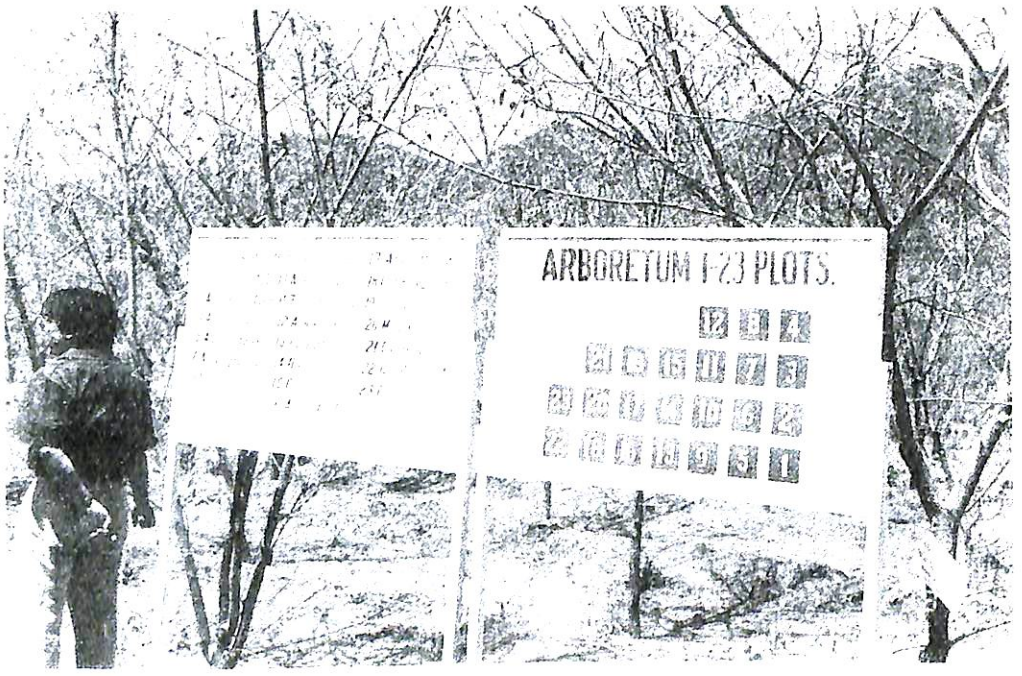


Photo 2 Arboretum area.

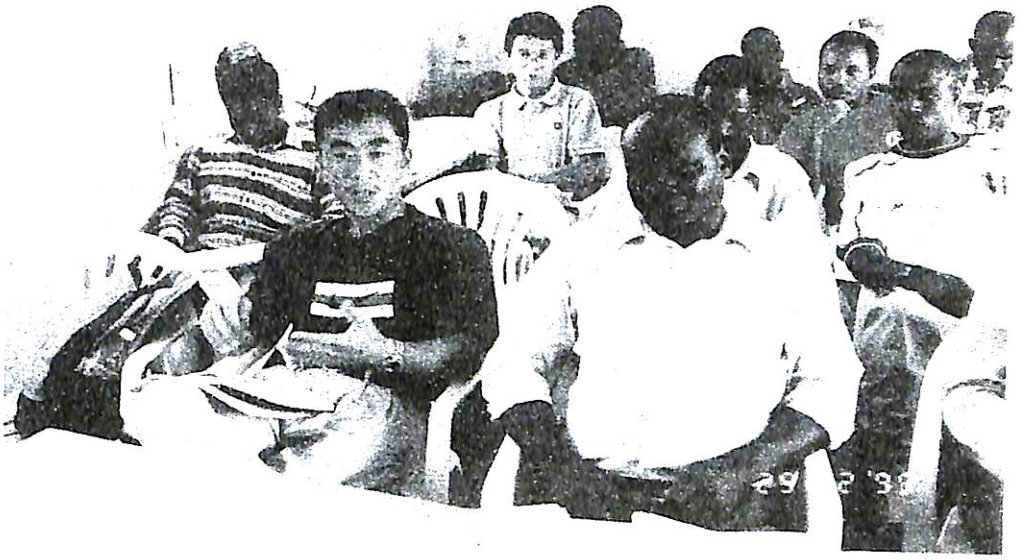


Photo 3. Briefing on the activities of KVFP at the conference room.

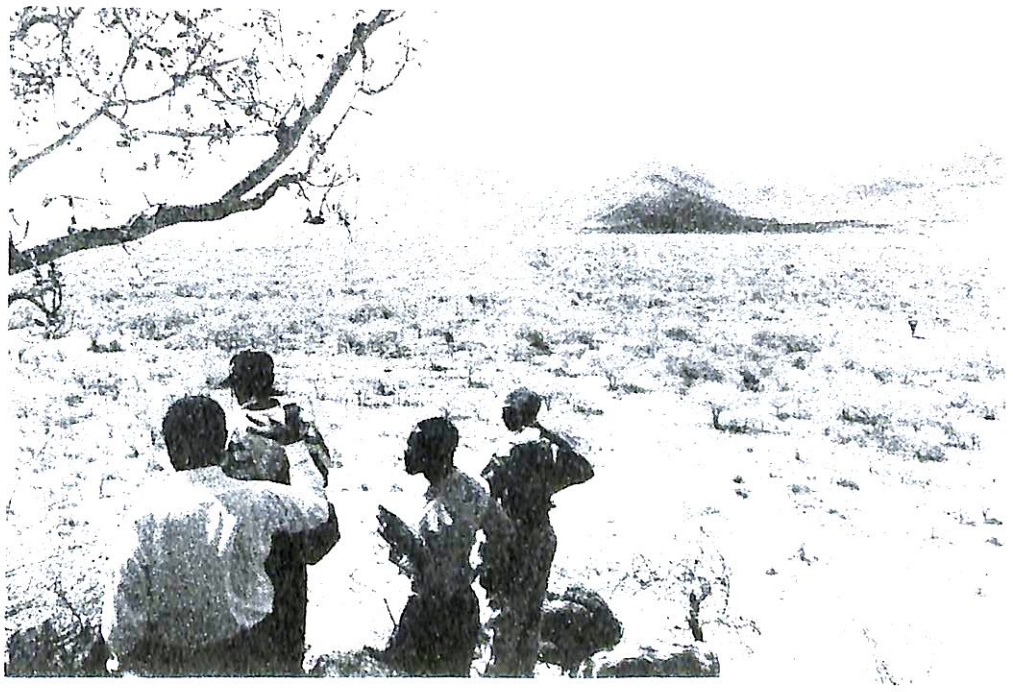


Photo 4 The view point of the project area.

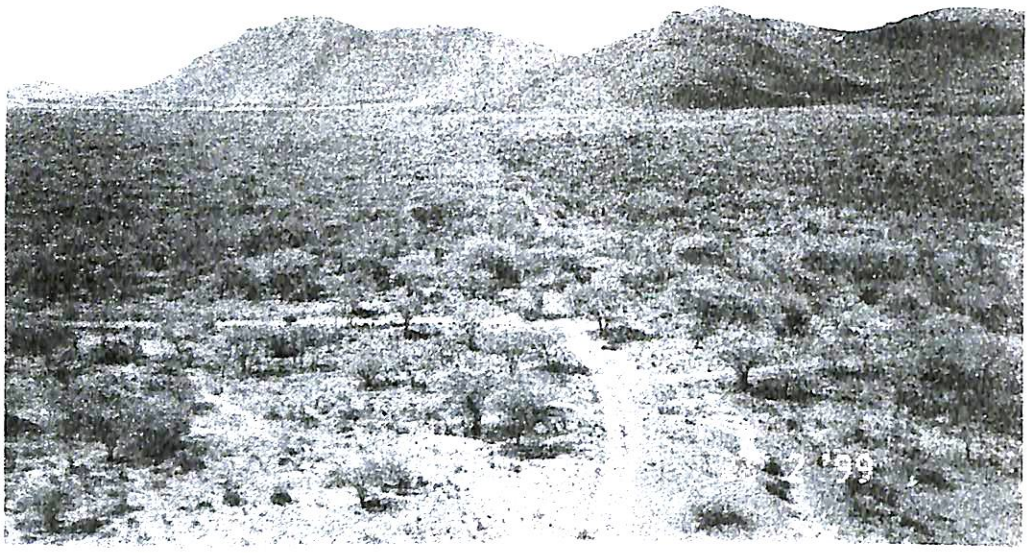


Photo 5 The natural vegetation and project area boundary from the view point.

Photo 6 The trial plantation of *Acacia polyacantha*.

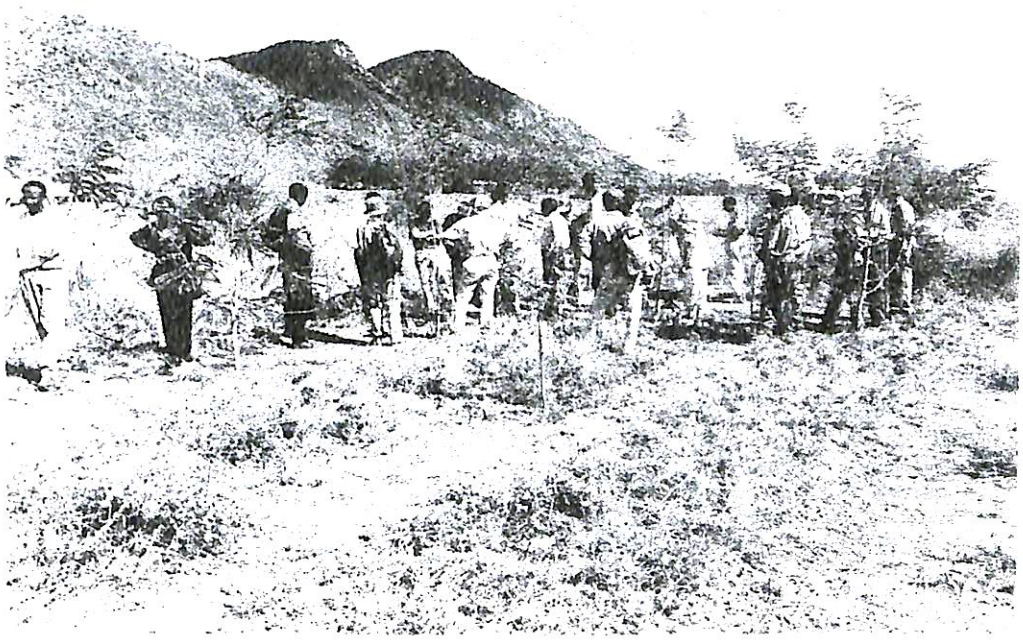


Photo 7 Direct seeding of Senna siamea experiment in Njoro area.

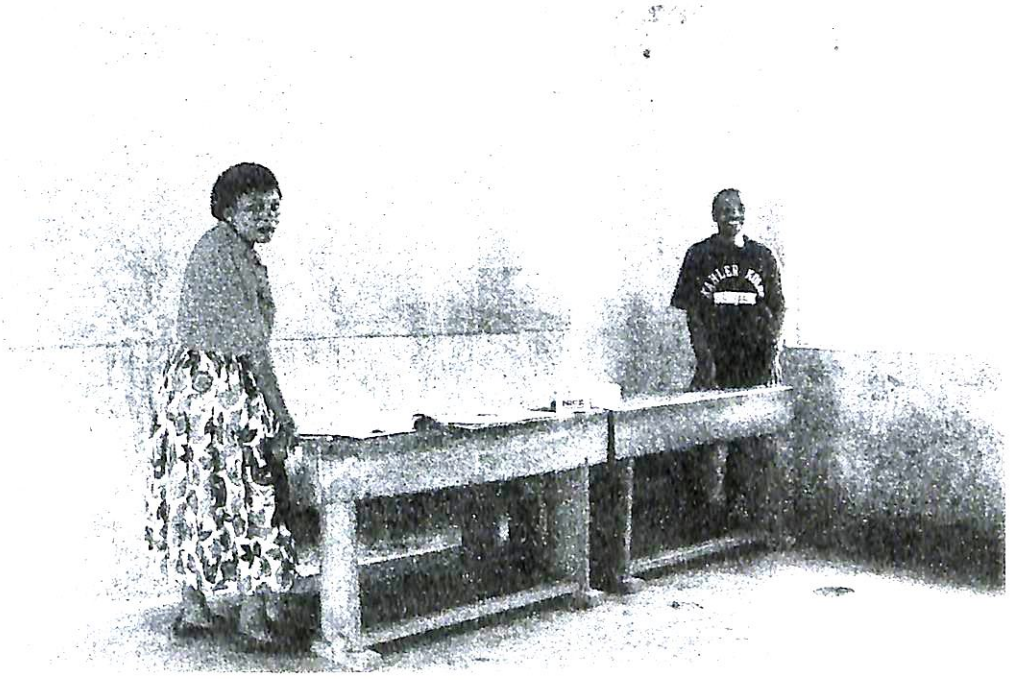


Photo 8 The project staff conducting a training session in Kisiwani Primary School.

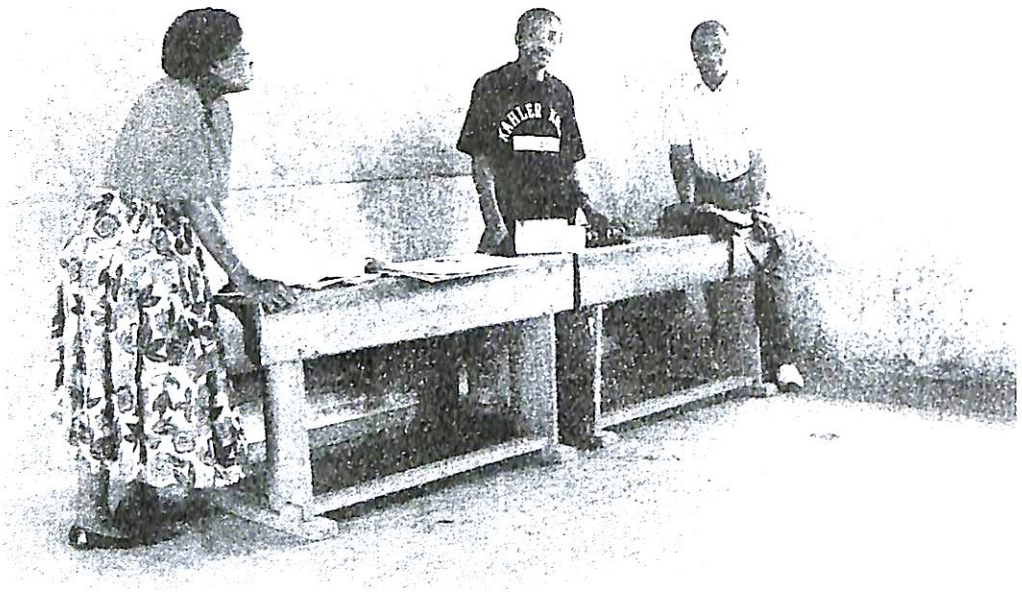


Photo 9 The Project Manager and the resource persons during the training session in Kisiwani Primary School.

Photo 10 Farmers attending a training session and SOFEM staff in Kisiwani Primary School.

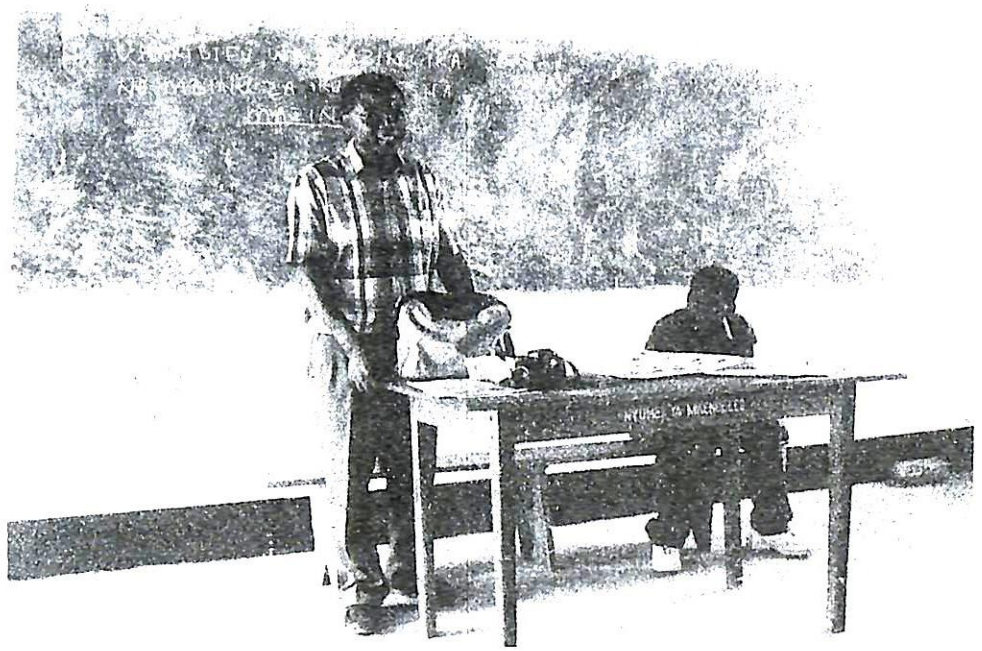


Photo 11 The project staff conducting a training session in Kisiwani Secondary School.

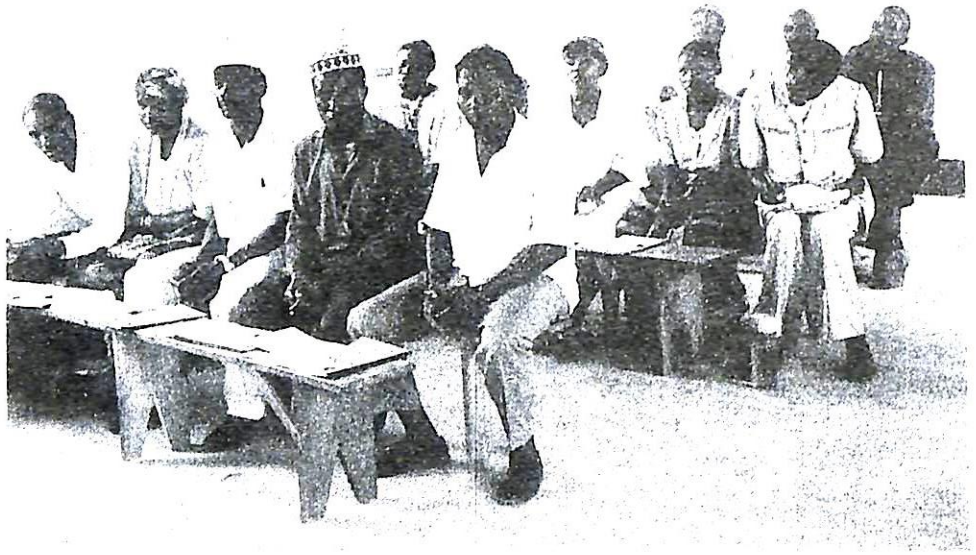


Photo 12 Farmers attending a training session and SOFEM staff in Kisiwani Secondary School.

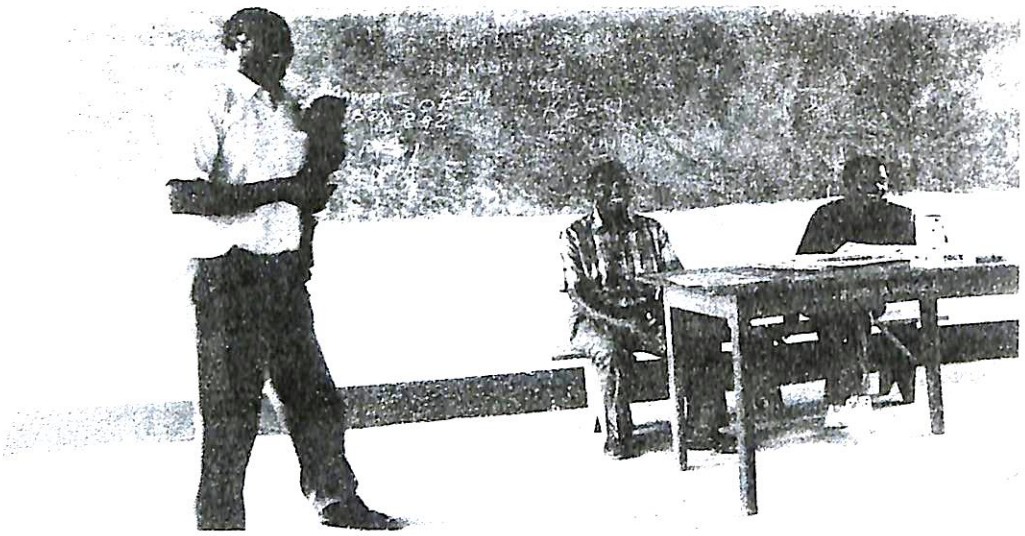


Photo 13 KEFRI/SOFEM Centre Director, Kitui explains to KVFP training participants (farmers) about the role of SOFEM project in Kenya.

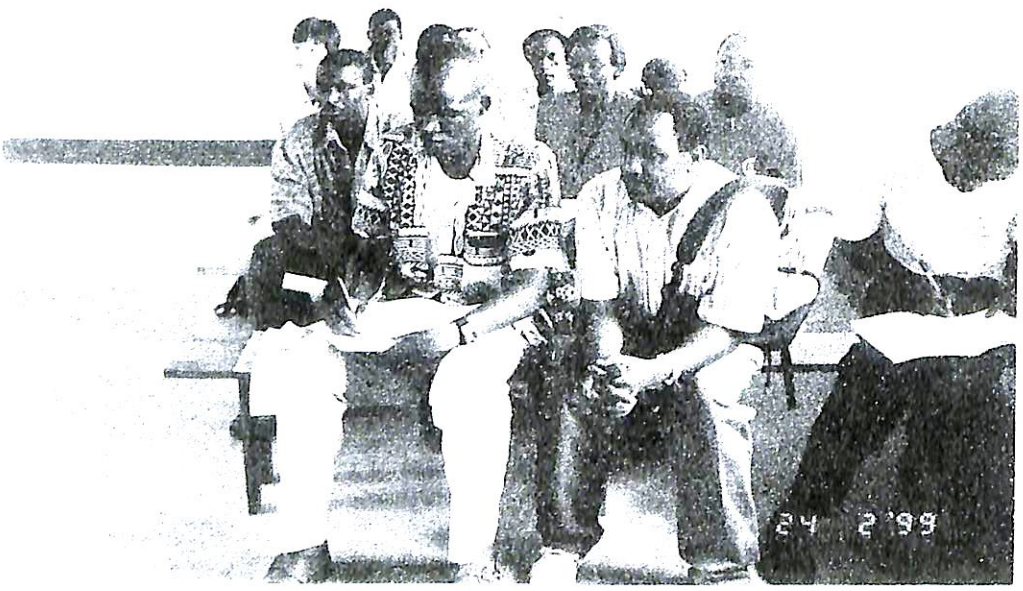


Photo 14 The SOFEM staff and the farmers during a training session in Kisiwani Secondary School.

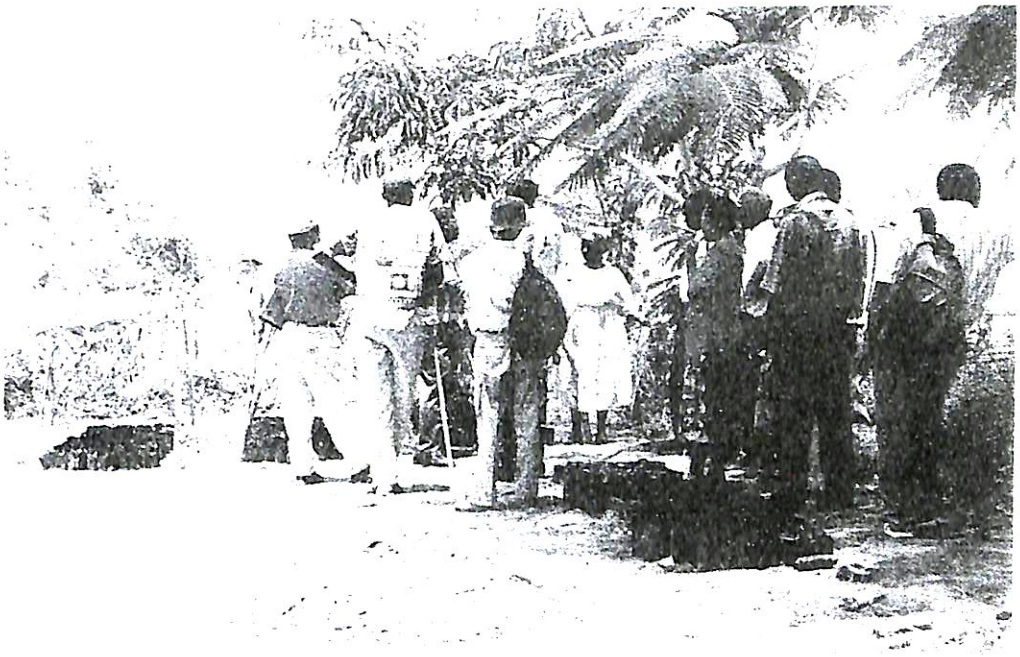


Photo 15 The training team visits Kohawa women group small-scale nursery in Kisiwani town.

Photo 16 An overview of the Kohawa women group nursery.

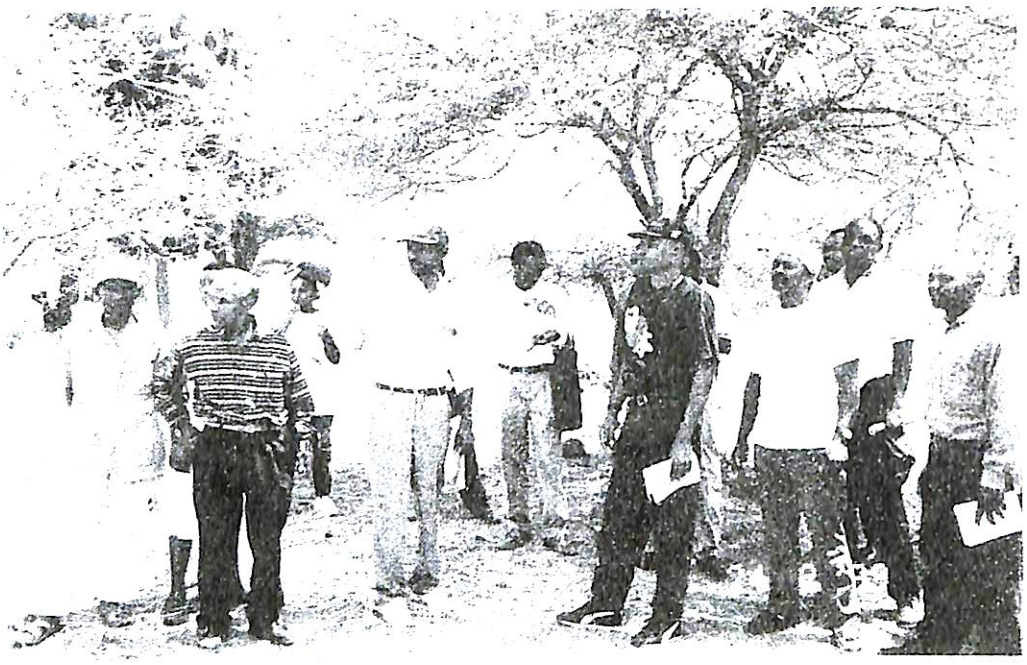


Photo 17 Masandare Sub-village Environmental Conservation Committee woodlot area.

Photo 18 Masandare Primary School tree nursery.

Photo 19 Masandare improved stove demonstration.

Photo 20 Makanya - Kamwana group plantation site.

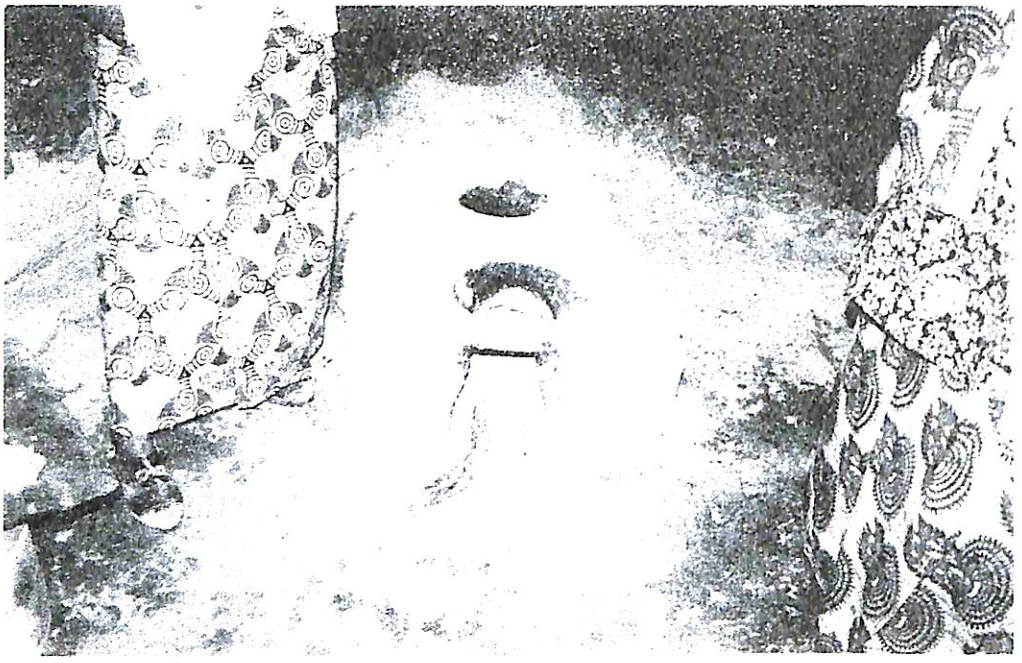


Photo 21 Makanya Kuni mbili stove (Tausi group member's home).

Photo 22 Makanya Tausi group 1992, fuelwood and poles plantation

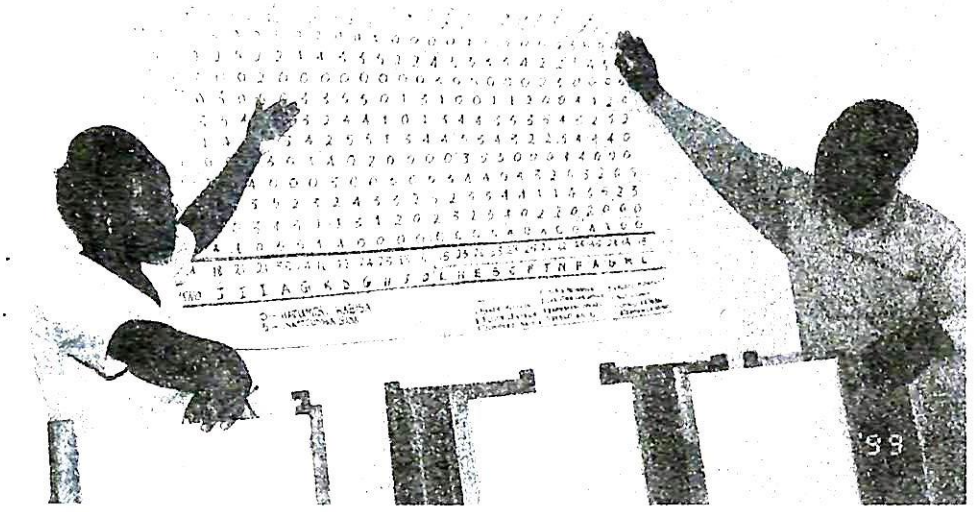


Photo 23 Dr. Fungamesa and Ms. Shirima of Tanzania Forestry Development Project, shows the visiting SOFEM team and KVFP Japanese Experts how their project conducts PRA in Mwanga District.

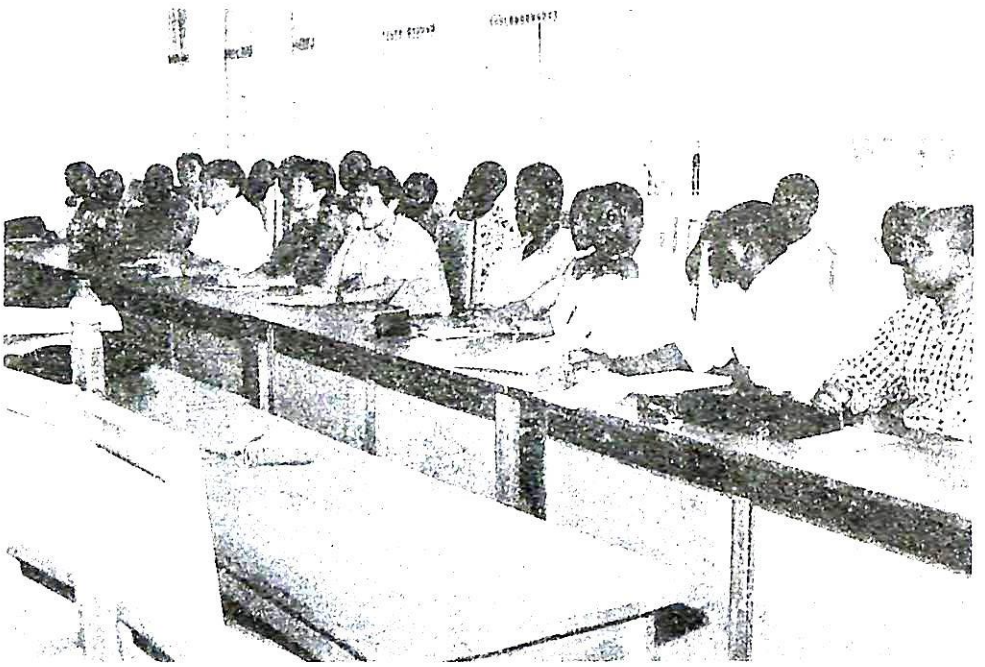


Photo 24 The visiting team during the PRA lecture session.

Photo 25 A group photograph of SOFEM/KVFP team at the KVFP project site in Same, Tanzania.

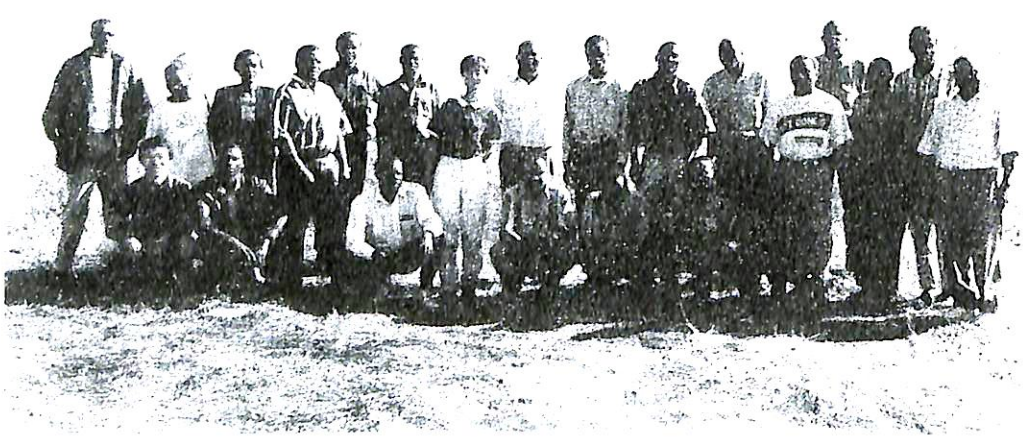
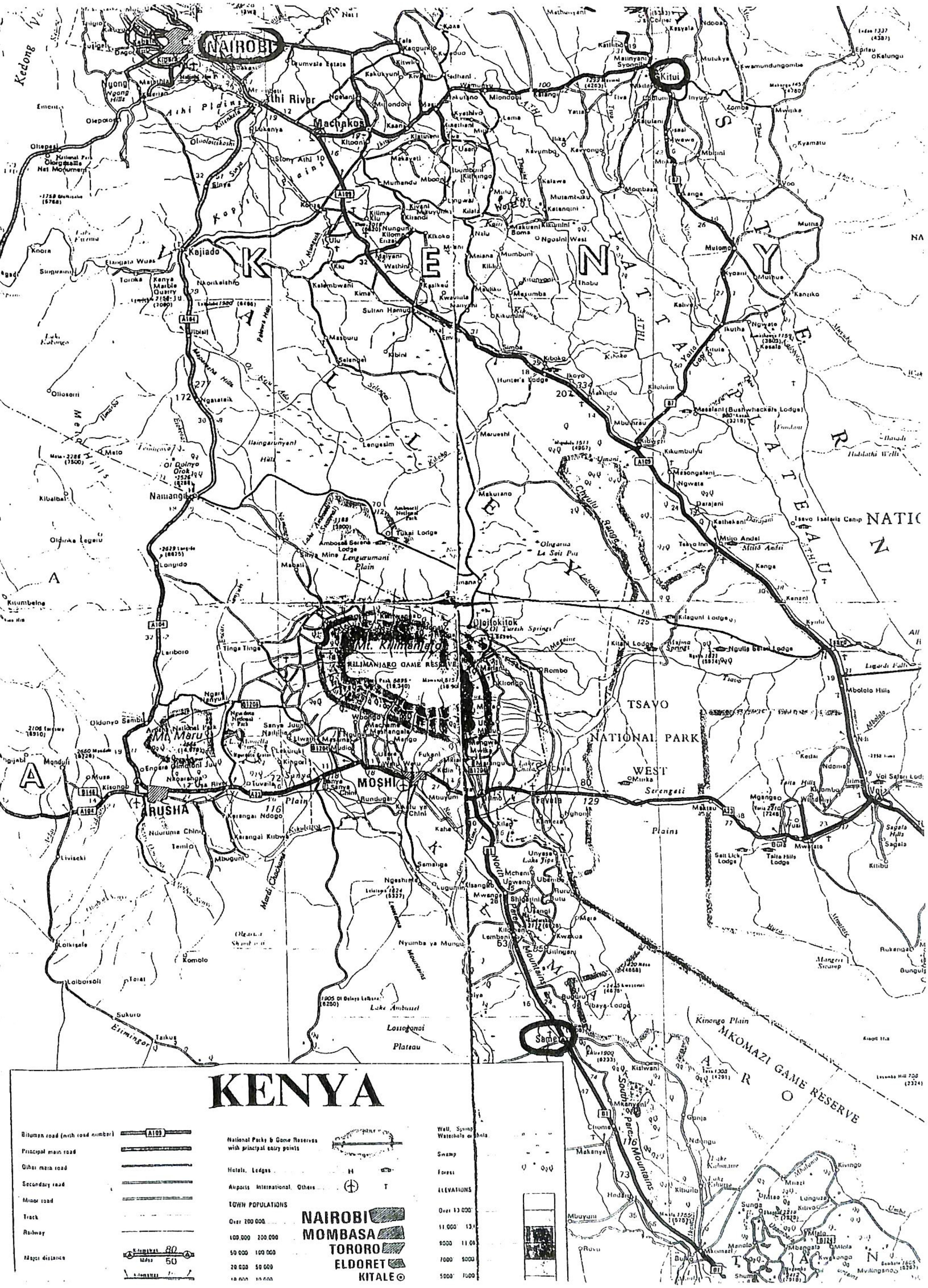


Photo 26 A group photograph of SOFEM team in Arusha area, Tanzania.


KENYA
Bitumen road (with road number)
Principal main road
Other main road
Secondary road
Minor road
Track
Railway
Major distance
National Parks & Game Reserves with principal entry points
Hotels, Lodges
Airports International, Others
TOWN POPULATIONS
Over 200 000 NAIROBI
100 000 - 200 000 MOMBASA
50 000 - 100 000 TORORO
20 000 - 50 000 ELDORET
KITALE
ELEVATIONS
NAIROBI
Athi River
Machakos
Kitui
Kajiado
Namanga
Longido
ARUSHA
MOSHI
Mt. Kilimanjaro
KILIMANJARO GAME RESERVE
Mt. Meru
Arusha National Park
Amboseli National Park
Ol Tukai Lodge
Amboseli Serena Lodge
Lenguruman Plain
Loitokitok
Taveta
Voi
Mtito Andei
Kibwezi
Makindu
Hunter's Lodge
Kilaguni Lodge
Ngulia Safari Lodge
TSAVO
NATIONAL PARK
WEST
Serengeti
Plains
Chyulu Range
YATTA PLATEAU
Taita Hills
Salt Lick Lodge
Taita Hills Lodge
Same
North Pare Mountains
South Pare Mountains
MKOMAZI GAME RESERVE
Kinongo Plain
Lake Jipe
Lake Amboseli
Lossogonoi Plateau
Athi Plains
Kapiti Plains
K E N Y A
T A N Z A N I A