

A REPORT ON A STUDY TOUR

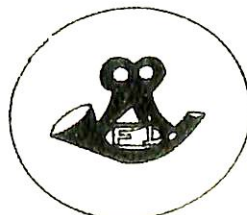
TO COASTAL REGIONS

OF KENYA

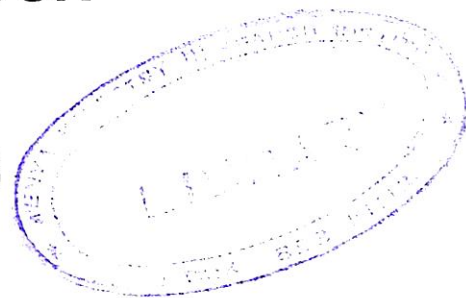
BY

SOFEM PROJECT STAFF

17 – 21, JANUARY, 2000



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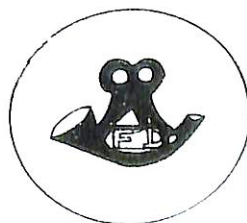


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Introduction

Social Forestry Extension Model Development Project (SOFEM) was set up with the aim of equipping the inhabitants of the semi-arid areas of Kenya with appropriate techniques to plant and manage trees through establishment of farm forests by local residents. To effectively undertake project activities, it has been found necessary that project staff has to visit and interact with staff from other project undertaking related activities. This was therefore the basis for the study tour to Coast Province. The tour was organised by KEFRI, FD and funded by JICA. This was a five-day tour 17th – 21st January 2000.

The team visited ARIDSAK, Kibwezi irrigation project by the University of Nairobi, Taita Taveta Agricultural Project (Wundanyi), Bamburi Nature Trail (Mombasa) Kipepeo Project, KEFRI – Gede Research Station, Coastal Forest Conservation Project (Kilifi and Kwale) and the Mwaloganje Elephant Sanctuary (Kwale).

ARIDSAK PROJECT KIBWEZI

Integrated Development in Semi-arid Areas of Kenya (ARIDSAK) is a bilateral project between the Governments of Belgium and Kenya. It is executed through the Belgian Administration for Development Cooperation (BADC) as a lead institution representing the Government of Belgium and the Kenya Forestry Research Institute (KEFRI) as a lead institution representing the government of Kenya. The project collaborates closely with other institutions e.g. Kenya Agricultural Research Institute (KARI), Forest Department, Agriculture and Livestock, Community Based Organizations (CBDs) and NGOs. It also works closely with Department of Social Services, Education and Provincial Administration. The project operates within three divisions of Makueni and Kajiado districts i.e. Kibwezi and Kathonzweni in Makueni and Mashuru in Kajiado. The project is still at the initial stage and is about two years old at the moment.

The main objective of the project is to develop, implement and promote agriculture and agroforestry technologies and policies that will improve the status of resource poor farmers and pastoralists in Semi-arid areas of Makueni and Kajiado districts without adversely affecting the natural resource base.

Main tasks of ARIDSAK

- Crop improvement
- Pasture improvement
- Tree crop improvement

It was learnt that the project operates on on-station land of 21 acres and associating with 105 farmers.

Extension Methodology

Is based on 3 approaches namely, village, group, individual approaches are used.

Technologies and trials conducted are:

- Wind breaks trials using both exotic and indigenous species.
- Fruit tree establishment (exotic and indigenous).
- Pasture development, especially indigenous ones.
- Mulching trials.
- Species and provenance trials.

On-station trial (1)

This is located at Kiboko area and serves the purpose of research and demonstration. It covers an area of about 21 acres. The plot has three objectives (1) crop improvement (2) tree improvement and (3) pasture improvement. Several trial plots have been established and these includes windbreak, provenance trial, fodderbank, fruit trees established are *Citrus limon*, *Psidium guajava* as well as some indigenous fruits such as *Sclerocaria birrea*, *Annona spp.* etc. All these were planted in May 1999. Three types of mulch are being tried on the fruits. These are grasses, volcanic ash and stones. Intercropping of several crops within the area is done. A buffer zone of maize is planted around the plot to keep off monkeys and other destructive animals from the plot. The types of crops raised includes maize (dryland composite), greengram, castor oil, sorghum, cowpea etc. Tree species used for windbreak are *Senna siamea*, *Acacia mellifera*, *Schinus molle* and *Grevillea robusta*. In provenance trial, *Eucalyptus camaldulensis* and *E. tereticornis* from different areas of the country including some from Bulawayo in Malawi and Vitoria falls in Uganda are tested.

Range management and improvement is also tried in this area. Several grass species are under investigation and these include *Vetetis senegalensis*, *Chloris gayana*, *Cenchrus celliaris*, *Panicum maximum*, etc.

Central tree nursery

The nursery is located within the office compound and has three objectives (1) acts as a training tool for farmers (2) research work and (3) seedlings production for Kibwezi, Mashuru and Kiboko areas. Several utility tree species are raised at the nursery. They include; *P. thornigii*, *G. robusta*, *S. siamea*, *C. papaya*, *M. indica*, *M. oleifera*, *L. leucocephala*, *D. melanoxylon*, and *G. livingstonia* among others. Arboretum with different tree species have been established around the project compound.

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On-station trial (2)

This trial plot is located few kilometers from Kibwezi town and the objective is to try to develop technologies that could address the farmer's problems in ASALs. The mean annual precipitation in the area is about 600 mm and the temperature ranges from between 27-30°C. Several trials have been established. The trials are contour crop planting, contour trench planting using nitrogen fixing shrubs, improved fruit orchard and food crops variety testing. Others are tree species trial for wood curving, multistory testing, rehabilitation of degraded land using trees and shrubs, trees of medicinal values, woodlot establishment technology, and provenance screening of *Eucalyptus tereticornis* and *E. camaldulensis* and home garden establishment.

Visit to on-farm trial

The project has established about 90 on-farm trials within the project target areas. The farmer's selection is based on two aspects i.e. democratic and strategic. Democratic farmers are those selected by the villagers while strategic are those selected based on strategic positions e.g. water points, cattle dips etc. Logistic support from the project includes seedlings, working tools, crop seeds and technical advice. This particular activity started in April 1999.

The first farmer to be visited was Mr. Boniface Musya in Utithi location. The farmer is about 50yrs old. His land size is about 7 acres. To date, 521 seedlings have issued by the project to the farmer and out of which, he planted 496 and the rest gave out to neighbours. The technologies tried out to the farm include fodder bank, boundary planting, compound planting, fruit orchard and live fencing. The farmer has so far tested about 21 tree species. Some of which are *G. robusta*, *T. mentalis*, *J. mimosifolia*, *C. papaya*, *M. indica*, *C. sinensis*, *E. camaldulensis*, *A. indica*, *S. siamea* etc. Some crop seeds were also given by the project. They include Maize (Katumani, DLC and DHI), Sorghum (Seredo), Beans (Katumani), Cowpea (K80 and KKI) and Greengram (K26).

The next farmer visited was Mr. Nyamai Kikwau of Musongaleni location. The farm size is about 8.5 acres. In May 1999, the farmer planted 179 seedlings, which gave a survival of 80%. In November the same year, the project supplied the farmer with 371 seedlings. Some were planted at the farm and the rest give out to neighbours. In January 2000, the project again supplied 613 seedlings to the farmer. The type of technologies practiced by the farmer are woodlot, fruit orchard, live fencing and boundary planting. The species planted by the farmer include; *C. papaya*, *S. cuminii*, *G. robusta*, *E. camaldulensis*, *J. mimosifolia*, *L. leucocephala*, *D.caffra*, *Annona senegalensis* and *P.guajava*. Apart from the supply of seedlings, the project also assisted the farmer with at least a kilo of several types of crop seeds. Other logistic support includes working tools and frequent technical advice.

Outstanding Innovative Technologies Observed

- Use of baobab fruit shells for potting (durable up to 8 months)
- Raised bed to reduce termite attack
- Suspended seed bed cum face washing water re-use
- Diversity of tree species raised

UNIVERSITY OF NAIROBI - KIBWEZI

The farm is situated in Kibwezi Division of Makueni District and is under the management of the University of Nairobi. The farm was established as a pilot farm with the support of USAID. The donors who were funding the project (farm) pulled out except the Government of Israel, which provides the technical.

Type of crops

Crops, which are produced in the farm, are: -

- Maize
- Beans
- Fruits
- Vegetables

Vegetables

- Sukuma wiki
- Egg plant
- Oak
- Cabbages
- Onion
- Cowpeas
- Tomatoes

Fruits

- Mangoes of various varieties
- Different varieties of oranges
- Lemons
- Pawpaw (*Carica papaya*)
- Avocado (*Persea americana*)
- Passion fruits

On-station trial (2)

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- Passion fruits

Types of Irrigation

- Sprinkler
- Drip
- Mabguts - nursery
- Micro-jets - type of drip irrigation

Transport

The following are used as means of transport at the farm.

- Lorries to transport products to market e.g. Nairobi and Mombasa.
- Tractors used to carry farm produce and cultivation
- Carts which are pulled by donkeys
- Wheelbarrows

Markets

According to the Farm Production Manager, the farm has no specific markets for products. They usually sell their products to major cities and towns and others to local markets.

Benefits to the Community

The management of the farm allows farmers into the farm to study and see technologies, which they use, and also they advice farmers how to improve crop production on their farms.

Problems

1. Salty water, which affect crops after irrigation.
2. The management of the farm has no guaranteed markets for their products.
3. Poor means of transport since roads are impassable which leads crops perishing before reaching the market.
4. Occasional breakdown of machines.
5. Pests,
6. *El Nino* rain effect.

FORESTRY IN TAITA TAVETA DISTRICT

Taita Taveta is one of the districts comprising the coast province .Its mainly hilly but with good red volcanic soils. The higher areas receives over 1000 per annum and the lower parts are mainly Asals receiving about 700mm.

Forestry in Taita Taveta is mainly conservation of indigenous highland forests (Water catchment and biodiversity). The district boasts over 5800 ha non-gazetted forest under the county council and 1000 ha gazetted under the forest act.

The Taita forests are well known in Kenya for their share of endemic taxa, birds, herpetofauna, invertebrates and plants. Most forested areas are under the county council, which lacks forestry expertise and has contracted the forest department to manage on their behalf. Taita being one of the biodiversity rich sites, several projects have come up to support forestry conservation and extension in the district.

Cross border biodiversity conservation project

Started in 1998, is funded by GEF (Global environment facility) and disbursed through UNDP, UNEP and World bank. The project in Taita Taveta is being implemented in close collaboration with District forest office.

Major issues facing forestry in Taita Taveta District

- ♣ Many of the biodiversity rich sites are gazetted as protected areas and despite that, the resources are depleting at high rates. Forests are being encroached and converted to farmland and biodiversity lost through overexploitation of resources.
- ♣ Communities have little knowledge and awareness of the biodiversity issues.
- ♣ Existing legal and social regulation do not permit sustainable exploitation of biodiversity.
- ♣ Government forestry agencies in the region have reduced capacity and are poorly equipped with today's newer ideas of joint management with local community.

The project objectives

- To create an enabling environment in which government agencies and communities can jointly regulate resource use.
- Balancing the supply and demand factors that impact on biodiversity conservation and wise use.

Taita Taveta Asals Project

Started mid 1980s funded by DANIDA, the project supported forest conservation in the highlands, promoted group /individual nurseries and promoted Agroforestry for sustainable farming in the lower ASAL areas.

T.TAP Project

Started in 1998 also funded by DANIDA.

Objectives

To manage soil, water, vegetation and animal resources in selected focal areas in an extension approach.

Project activities

- Catchment protection (through the focal development area) approach
- Provision of water supply structures
- Agricultural development
- Nursery establishment and management
- Small scale irrigation
- Livestock development
- Forestry development (conservation and extension)
- Water and soil conservation (on-farm)
- Post harvest management
- Agricultural development
- Land adjunction
- Staff training
- Emergency road and bridge repair

Project inputs

DANIDA - Finance and personnel

Kenya government –Personnel

Community –Labor, cash (cost share) and local materials.

BAMBURI NATURE TRAIL

Bamburi nature trail is located in a former limestone quarry of Bamburi cement industry. The objective of the nature trail was to rehabilitate degraded quarry land.

Background Information

The park used to be a seabed quarter-million years ago. Water started reducing due to coral mining in the sea leaving the site to go bare. In 1951, Bamburi Cement Factory started mining limestone.

Mining continued up to late 1960s when it was discovered that the sea water table was not far and, which could hamper mining operation if continued.

In 1971 a scientist Dr. Ronald Allans, started long term measures of rehabilitating the degraded land (quarry). Twenty-six different tree species were planted as the first step at rehabilitation of degraded quarry. Among 26 different species that were planted were:

- *Casuarina* sp. (from Australia)
- *Algaroba* spp. (from America)
- *Carnocarpus* spp. (from Somalia)
- *Mangrooves* (from the region)

Conservation of indigenous tree species was also under taken.

Features in the nature trail

The nature trail consist of the following features:

- Fish ponds
- Forest and
- Grassland

Wildlife

In an effort to rehabilitate the quarry, it was felt that varieties of wildlife be introduced to the park, for the purpose of promoting eco-tourism. Animals also improved the fertility of the degraded site through their droppings. Droppings stimulated more foliage and hence rapid growth of vegetation. The park host numerous varieties of wildlife including hippos, buffaloes, antelopes, monkeys, crocodiles, snakes, tortoise, turtles, fish and birds. Millipedes were also introduced to the park. Millipedes play important role of decomposing *Casuarina* litters which decompose very slowly forming a carpet on the ground suppressing grass and other undergrowth.

Fish ponds

Fishponds were constructed on sites where excavation was done when mining of lime was carried out. In some ponds, wastewater from the factory was collected. Such ponds were reclaimed by planting some species of water plants, which played a role of purifying the wastewater to be recycled in the factory. Other animals kept in rounds include hippos and crocodile. Crocodiles are important in nature trails because they act as nature dustbins. Dead and rotten animals found in the forest are fed to crocodiles. Crocodiles also feed on fish. Hippos are known to be vegetarians and they are reared for their waste droppings, which stimulate foliage and activate growth of vegetation in the park.

Large-scale commercial fish farming is carried out in the tank with apartments. Several species of trees are planted for protection of fish from birds of preys (fish hide under the

roots of Mangrooves). The tank also has an outlet through which water goes to the forests.

Forest

Host varieties of animals such as antelopes, buffaloes, monkeys and birds. Migratory birds from all walks of life make stop over at the park making the park a beautiful bird sanctuary.

A giant variety of tortoises are also bred in the park. The totoise played a role of lawn mowing.

Snakes Park

Hosts varieties of snakes ranging from most poisonous to least poisonous types. The snakes are:

- * Gaboon viper
- * Cobras
- * Pole Python
- * Twig vine snakes
- * Green mambas
- * Horn vipers
- * Puff adders among others

GEDE KEFRI STATION

The station is situated few meters from Gede Trading Centre on Mombasa-Malindi road. The station was established in 1969 as East African Research Centre. It was in the same year when KEFRI plantation was established. In late 1980s the station was elevated to a Regional Research Centre of KEFRI.

Since its inception, the station had been carrying out on station activities and on farm activities. The activities include:-

- (i) Promotion of bamboo by establishment of on station demonstration plots.
- (ii) Promotion of sustainable management of forest by educating the local community.
- (iii) *Casuarina* trial plot. *Casuarina* is one of the species highly preferred by local communities for poles and building construction.
- (iv) Eucalyptus trial plots.

- (v) Conservation of indigenous trees by creating awareness to the local community on needs to conserve natural forests and biodiversity in the forests. Schools are also involved through educational programmes.
- (vi) On farm demonstration of alternative species other than *Casuarina*. Thirty farmers were involved in these demonstrations.
- (vii) Seedling production from central trees nursery, which produce a total of 41000 seedlings of mixed species like bamboo's, *S. spectabilis*, *Spathodea* spp., *Leucena leucocephala*, *Dalbergia melanoxylon*, *Sena siamea* among others. The seedlings are planted in demonstration plots, KEFRI plantations on farms (issued to farmers freely), or sold for cash.

Conservation of natural forest is mainly carried out on Arabuko Sokoke by KEFRI in collaboration with forest department, Kenya wildlife services and National Museum of Kenya. Conservation project is funded by an NGO known as Bedlife International.

Arabuko Sokoke Forest

Is one of the biggest natural forests extending to two districts namely Kilifi and Malindi districts. Covers an area of approximately 42,000 ha and surrounded by 54 villages. The forest is gazetted under forest department and Kenya wildlife services. Have wide varieties of indigenous trees and birds.

The forest due to its wide variety of birds attract large number of birds watching tourists from different places who normally come to the forest to watch the diversity of birds. The conservation project is participatory (community is fully involved in all stages of conservation). The community is involved in conservation of the forest through the following community based working groups: -

(i) Arabuko Sokoke Forest Guide Association

A community-based association whose role is to guide the local community on the importance of forestry and tourism, and need to conserve the forest and biodiversity. The association was formed due to the fact that even though the community knew that forest and tourism are important, they were still over-cutting trees because they did not have any alternative.

(ii) Rural Development Working Group

Also is community based consisting of representatives of various groups. The group mainly deals with promotion of tree planting activity by community. It played the role of educating the local community on conservation of the forest and its biodiversity. It also deals with socio-economic activities such as butterfly farming.

(iii) Forest Management Working Group

This is a community based working group consisting of representatives of existing groups and village elders. Play the following roles: -

- Involve community in forestry related socio-economic activities such as:-
 - * honey production
 - * butterfly farming
 - * wood curving promotion of wood curving species
 - * commercial group tree nurseries
 - * Promotion of ecotourism guiding (i.e taking visitors to the forest at a fee)

The idea of introducing forestry related economic activities like the ones mentioned was to ensure that the community benefited directly from the forest. This enhanced community participation in conservation of the forest.

KIPEPEO PROJECT - GEDE

Kipepeo means butterfly in Swahili. Kipepeo project is a butterfly farm-exporting pupae reared by farmers living adjacent to Arabuko-Sokoke forest as means of income generation and suitable use of the biodiversity.

The project is run by the East Africa natural history society in partnership with National Museum of Kenya mainly focusing on bird conservation, forest conservation and butterfly conservation.

Arabuko Sokoke forest is a forest reserve managed under a memorandum of understanding between the forest department and Kenya Wildlife Service with direct support from the National Museum of Kenya and Kenya Forest Research Institute. All the four bodies are represented on the Arabuko-Sokoke Forest Management Team and on a series of working groups (dealing with themes like conservation and education.

For many of the 150 butterfly rearing families the forest provides the source of line adult butterflies for breeding and leaves for feeding the caterpillars. The forest left could be of good use instead of turning it to cropland hence, promotion of butterflies farming and ecotourism where fee could be collected from the tourists (those who come to see them).

These people encountered several problems: -

1. Inadequate water supply
2. Wildlife destruction of the food crop
3. Lack of job opportunities

The butterfly-farming project was introduced in 1993 after consultations with the farmers, the chiefs, the local authorities, the Kenya Wildlife Service and the forest department.

Project headquarters were established at Gede Township, North of Mombasa, where suitable butterfly host plants were grown from seedlings and a large plight cage and breeding shed were built.

The forest has got more than 260 different species of butterflies. The first export was done in 1994. The project collects the pupae from the farmers where they have formed small units (production units) and pay them for export and those cannot be sorted for export are recorded.

At the Kipepeo base in Gede all the pupae from the farmers and those bred in situ are sorted and selected for export. Each pupa is then wrapped in tissue paper and cotton wool before being carefully placed and sent over seas by DHL for butterfly exhibit in Europe and USA. Over 700 pupae can be exported in a week during the high seasons. The project purchases the pupae from the farmers and one pupa costs 50 shillings.

NB: This project is like a pilot project where other institutions come to obtain what has been newly developed and exchange ideas e.g. With KEFRI, KARI and other related institutions.

Butterfly Demo Plot

The plot demonstrated how the community rears and feeds the butterflies and caterpillars. They are fed on big trees in nets covering the branches, then the later turns to pupae, which are exported. Around 30 different species of pupae are reared and exported.

Inside the demo plot a tree nursery producing different tree species and flowers is managed to demonstrate and supply enough seedlings to farmers carrying out butterfly farming to plant at the edge of the forest. Pupa, caterpillars were observed in cases while the butterflies were foraging on trees covered by a big net.

COASTAL FOREST CONSERVATION UNIT

The Kaya forests of the Kenya Coast are relict patches of the once extensive and diverse Zanzibar-Inhambane lowland forest of Eastern Africa. The word "Kaya" means homestead in several Bantu languages and historically these forest patches sheltered small-fortified villages or Kayas, which were, set up by the Mijikenda people fleeing

from enemy groups in the north. During the last century, these villages spread out from their forest havens. The Kayas then continued to be protected by the traditions and customs of elders, who used the old clearings for ceremonies and the surrounding forest as a source of forest produce and as burial grounds. Over the past few decades, a declining respect for traditional values and the elders, a rising demand for land for agriculture and modern development, mining, fuelwood and construction materials has led to loss and damage of these small forests and associated sacred groves. More than half of Kenya's rare plants occurs at the coast, most being found within these sacred forests. Little in-depth research has been carried out on these species and much is yet to be learnt about their ecology and medicinal and other potential values to humans. The Kayas also protect many small but important watersheds of the coastal foothills. The CFCU project was planned by WWF and the National Museums of Kenya (NMK) to continue investigation of the coastal flora and associated fauna (earlier started under two WWF-funded projects). It also aims to assist the Kaya Elders in their traditional care of these invaluable resources and to build on this nucleus of conservation practice through educational programmes and training in the local communities.

Objectives

The long term objective is to gazette all the Kaya forests and sacred groves in the Coast Province as National Monuments under the Monuments and Antiquities Act, and to introduce or enhance sustainable management practices. Specific objectives include promoting the development of alternative sources of forest resources; and gathering biological, social and other relevant information on these forests for the promotion of eco-tourism and educational uses, besides providing baseline data for an effective conservation strategy.

Activities

1. Management

CFCU staff holds regular discussions with Kaya Elders' committees and local officials to chart out joint management strategies. The guards patrol the Kayas and report incidents to the project staff. Minor offences are dealt with by the elders, who impose traditional fines, while the NMK lawyer deals with major ones. Limited firewood collection is allowed under close supervision of the guards, in accordance with local rules imposed by the Elders. The NMK lawyer is reviewing the National Monuments and Antiquities Act, under which 23 Kayas have been gazetted in Kwale District. He is also working on all legal aspects of the Kayas. A memorandum of understanding is in preparation between NMK, the Forest Department and Kenya Wildlife Service on areas of collaboration in Kaya conservation and general forestry. CFCU plans to support the Forest Department with equipment, materials and running costs to help expand social agroforestry.

2. Taxonomic Data Collection

Inventories of the floral composition of the forest patches are constantly carried out. Botanical work generates and updates species lists for each forest patch and involves specimen collection, preservation, identification and documentation.

3. Research

Researchers from NMK and other countries, including Australia and the USA have carried out studies since 1987 on forest bird communities, biodiversity and ethno-botany, under UNESCO's people and plant initiative. The studies surveys which have put four of the Kayas under "globally important" bird areas - entomology, as a result of which a new moth species for Kenya has been found, *Zamarada rufilinearia*.

4. Training

Botanists from NMK and other countries in Africa have been trained on herbarium techniques. The project intends to train six MSc students within the next five years, primarily from Kenya, as well as providing support to an archaeology student from the British Institute of Eastern Africa (BIEA) and in future, history students from the University of Nairobi.

5. Tree Planting

To encourage community afforestation, the project's tree nursery at the Kwale office propagates rare indigenous coastal tree species, which are given free charge to local people.

6. Environmental Education and Awareness Programme

This is effected through village Elders, group meetings, workshops, annual school essay and art competitions, and seminars. School parties are being encouraged to visit the project offices and the Kayas. A short film on the Kayas was made by WWF in 1992, and is one of several documentary features of WWF's work in Africa shown in the WWF video film "Africa Features". A play "Song of Mekatilili" about a heroic Giriama woman Kaya elder in the early 1900s has been staged in both Nairobi and Mombasa, with some WWF support. Several media articles and TV coverage have helped raise local awareness about the importance of and threats to the Kayas.

7. Cultural Activities

With support from WWF Small Grants Programme, Kaya Elders have held traditional prayers for rains and bumper harvests. Shrine cleansing ceremonies have also been held in cases where Kayas have been violated by private developers.

MWALOGANJE KWS PROJECT

The tour participants visited Mwaloganje KWS Project on 20/01/2000 being the fourth day of the study tour. On arrival the team leader did brief introduction from Kitui and the officer in-charge of the KWS office.

The officer in-charge explained to us that the community owns the project with little assistance from KWS. The community lived between two government gazetted forests (Shimba Hills and Mwaluganje), an area considered a corridor for elephants moving to and from the two forest. The elephants cause d a lot of damage to crops and attacked people. Because of the damages caused by the wild animals, the KWS approached the community requesting them to vacate the areas to be used as elephant sanctuary. The KWS used barazas to advice the community the reasons as to why they were to leave their land and how they will benefit. The community was to benefit through sharing the revenue collected by the KWS at the gate whereby the 2/3 goes to the community and 1/3 goes to KWS. The 2/3 is given to the community as the compensation of their land, which they left for the wild animals and the sharing is done every year.

We learned that the community is planning to have its own personnel who will be managing the sanctuary so that they would not be sharing the funds collected with the KWS. This was a successful case of community participation.

APPENDICES

Appendix i

**PROGRAMME FOR THE TECHNICAL STAFF STUDY
TOUR TO KIBWEZI AND COASTAL REGION. (REVISED)**

| Day | Date | Time | Activity |
|------------------|-------------|-------------------------|---|
| Monday | 17/01/2000 | 6:00 a.m. 11:00 a.m. | * Departure from Kitui * Arrival at Kibwezi * ARIDSAK * University of Nairobi Irrigation Project * Night at Voi. |
| Tuesday | 18/01/2000 | 8:00 a.m. | * DFO's Office Wundanyi * Visit Project in Wundanyi * Night at Mombasa |
| Wednesday | 19/01/2000 | 8:00 a.m. | * Visit Bamburi Nature Trail * Arrive Mtwapa Agroforestry Centre * Visit Kepepeo Project * Night at Malindi |
| Thursday | 20/01/2000 | 8:00 a.m. | * Visit Gede KEFRI Station * Visit Coastal Forest Conservation Project * Visit Mwaloganje (KWS) Project * Night at Mombasa |
| Friday | 21/01/2000 | 8:00 a.m. | * Leave for Kitui |

Appendix ii

CONTACTS OF ORGANIZATIONS VISITED

| | ORGANIZATION | ADDRESS (P.O. BOX) | TEL/FAX/E-MAIL |
|----|--|---------------------------------|---|
| 1. | KEFRI Kibwezi (ARIDSAK Project) | 87, Kibwezi | Tel: 97 Kibwezi |
| 2. | U.O.N. Irrigation Project | 316, Kibwezi | Tel: 50 Kibwezi |
| 3. | DFO. Taita Taveta | 1043, Wundanyi | Tel: 0148-2516/2132 Fax: 0148-2268/2112 |
| 4. | Mtwapa Agroforestry Centre | 32, Mtwapa | 011-485023(currently out of order) |
| 5. | Kipepeo | 58 Gede | Tel/Fax 0122-32380 E-Mail-Kipepeo @ africa on line. co. ke |
| 6. | Bamburi Nature Trail | 81995 Mombasa | Tel: 011-48550/754/48550 (office). 485340 (Nature Park) Fax 486157/485151 E-mail baobabfarm@swiftmombasa.com. |
| 7. | KEFRI Gede RRC | 201 Malindi | Tel/fax 0122-32020 |
| 8. | Coastal Forest Conservation Unit (C.F.C.U) | Box 86 Ukunda (Kwale Office) | Tel: 0127-2518 (Diani) E-mail cfcu. Kilifi@swiftmombasa.com. |
| 9. | KWS Mwaluganje | | Tel: 0127-4159 |

Appendix iii

LIST OF OFFICERS/RESOURCE PERSONS MET.

| | | | |
|-----|-------------------------|----------------------------|-----------------------------------|
| 1. | Mr. A.M. Mohammed | Project Manager | ARIDSAK Kibwezi |
| 2. | Dr. M. Gerkens | Project Advisor | " |
| 3. | Ms. Dorothy Ochieng' | Agroforester | " |
| 4. | Mr. D.K. Muchiri | Tree Physiologist | " |
| 5. | Mr. Musia | Forester/Senior Technician | " |
| 6. | Mr. Bonface Musya | Farmer-On farm | " |
| 7. | Mr. Nyamai | " | " |
| 8. | Mr. Michael Waoro | Production Officer | U.O.N. Irrigation Project Kibwezi |
| 9. | Mr. J.M. Kieti | DFO Taita/Taveta | F.D. |
| 10. | Mr. Aldo de Kartzow | District Advisor | DANIDA/TTAP |
| 11. | Mr. Pius | Tour Operator | Bamburi Nature Trail |
| 12. | Mr. Suguma | Supplies Officer | Mtwapa Agroforestry Centre |
| 13. | Mr. Washington Ayiemba | " | Kipepeo |
| 14. | Mr. Caleb Mwendwa | Centre Director | KEFRI Gede RRC |
| 15. | Mr. Joseph Maweu | Forester | " |
| 16. | Mr. Mbuvi | Research Officer | " |
| 17. | Mr. Jembe Musee | Programme Officer, Kilifi | Coastal Forest |
| 18. | Mr. Juma Omari Lumumba | Programme Officer, Kwale | Conservation Unit (C.F.C.U) |
| 19. | Mr. John Baya Mishanze | Env. Educ. Officer | " |
| 20. | Mr. Hamisi Mdudu | Field Officer | " |
| 21. | Mr. Charles Mutavi | Ass. Field Officer | " |
| 22. | Mzee Abdala A. Munyenze | Chairman Kaya Kinondo | Kaya Kinondo (C.F.C.U) |
| 23. | Mr. Moris Litoro | Scientist | KWS Mwaluganje |

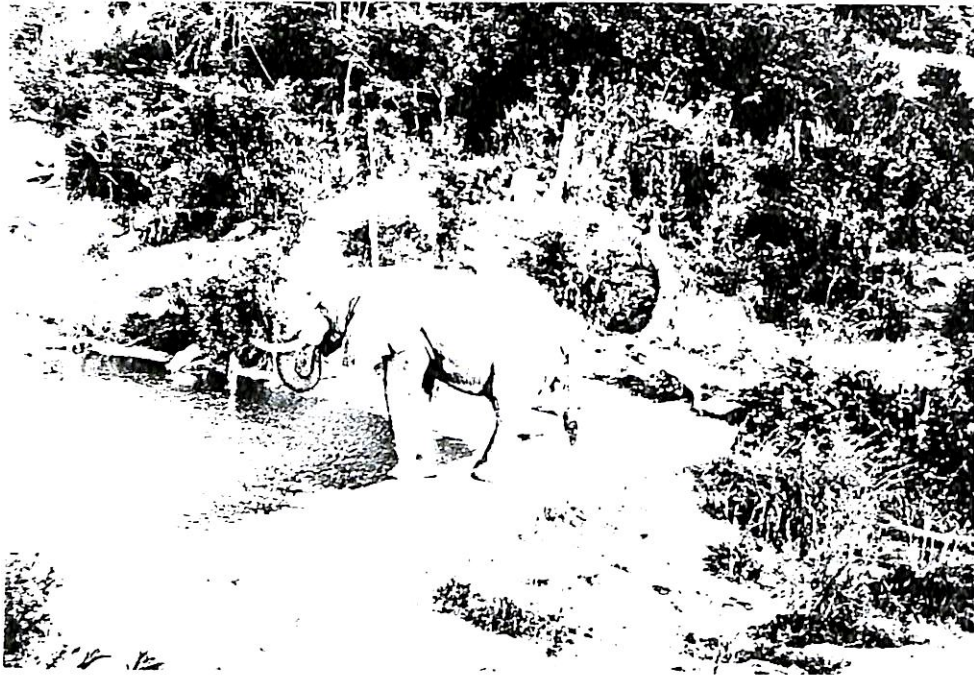
Appendix iv

LIST OF PARTICIPANTS

| | | | |
|-----|------------------------|---|------------|
| 1. | Mr. Benard Muok | - | KEFRI |
| 2. | Mr. Robert Nyambati | - | " |
| 3. | Mr. Ali Atanas | - | " |
| 4. | Mr. Chahilu Osore | - | " |
| 5. | Mrs. Emily Kitheka | - | " |
| 6. | Mr. Ezekiel Kyalo | - | " |
| 7. | Mr. Gabriel Mutua | - | " |
| 8. | Mr. Nathan Omambia | - | " |
| 9. | Mr. Peter M. Nyambuti | - | F.D. |
| 10. | Mr. Elijah Oyugi | - | " |
| 11. | Mr. Peter Kyenze | - | " |
| 12. | Mr. Silvester Musee | - | " |
| 13. | Mr. William J. Syengo | - | " |
| 14. | Mr. Hiro Miyazono | - | SOFEM/JICA |
| 15. | Mr. Nozomu Hayashi | - | " |
| 16. | Mr. Jeremiah Nguniko | - | " |
| 17. | Mr. Nelson Kavoi | - | " |
| 18. | Mr. Christopher Kilele | - | " |
| 19. | Mr. M.J. Otieno | - | " |
| 20. | Ms. Yuko Takeuchi | - | " |
| 21. | Mr. John Kimanzi | - | F.D. |
| 22. | Mr. Solomon Munywa | - | KEFRI |
| 23. | Mr. Joseph Kalani | - | KEFRI |

Appendix v

PHOTOS:



An elephant watering in the comfort of Mwaluganje
Community Elephant Sanctuary



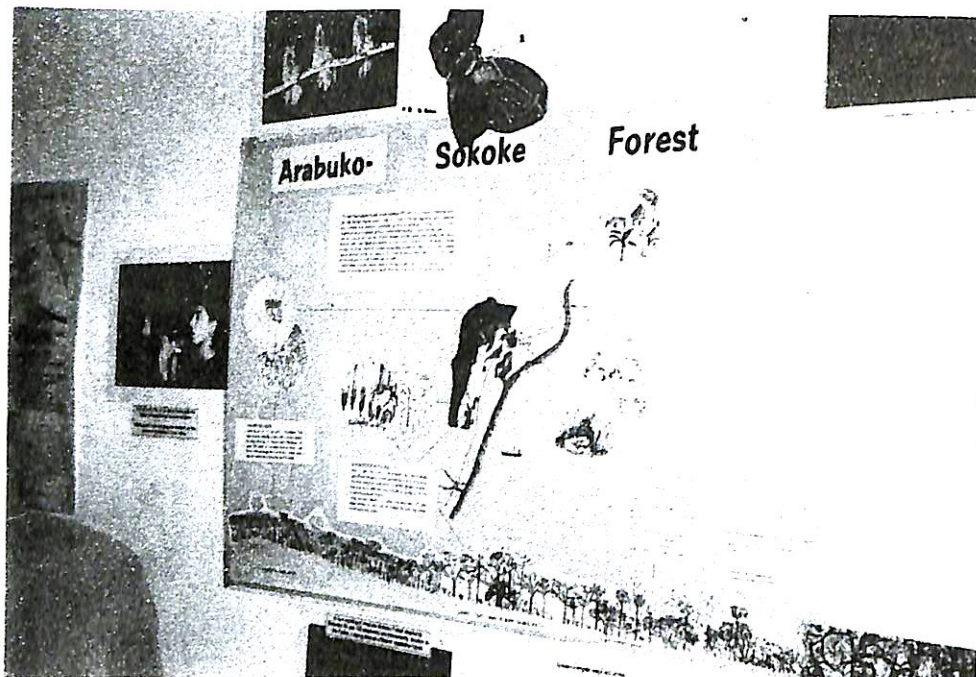
Eco-tourism at the Tsavo East National Park.



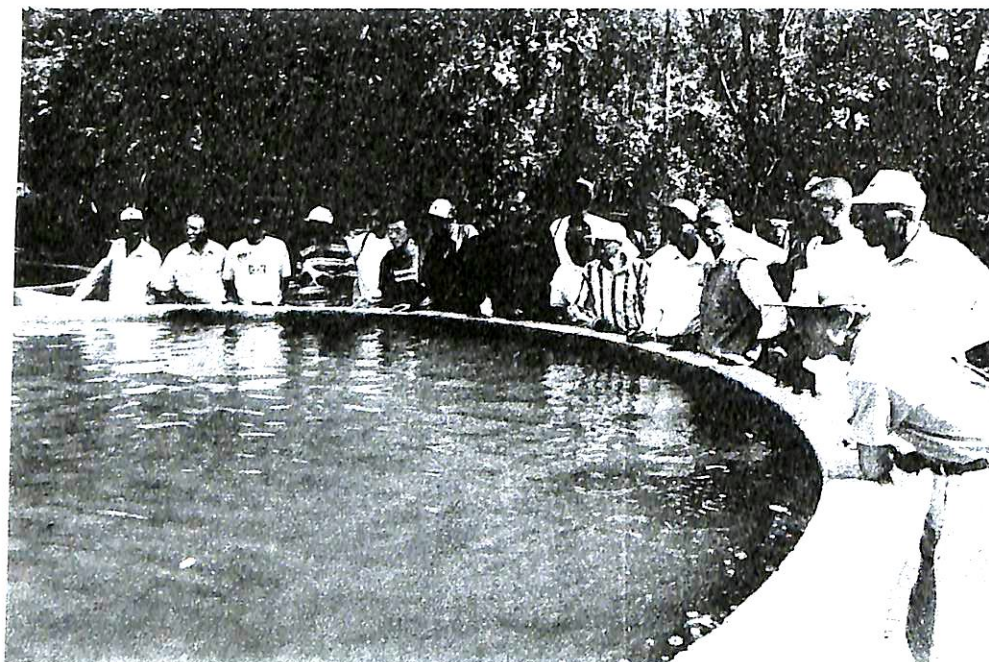
The group visiting one of the target farmers of ARIDSAK Project Kibwezi, explaining is the Project Manager Mr. A. Mohammed.



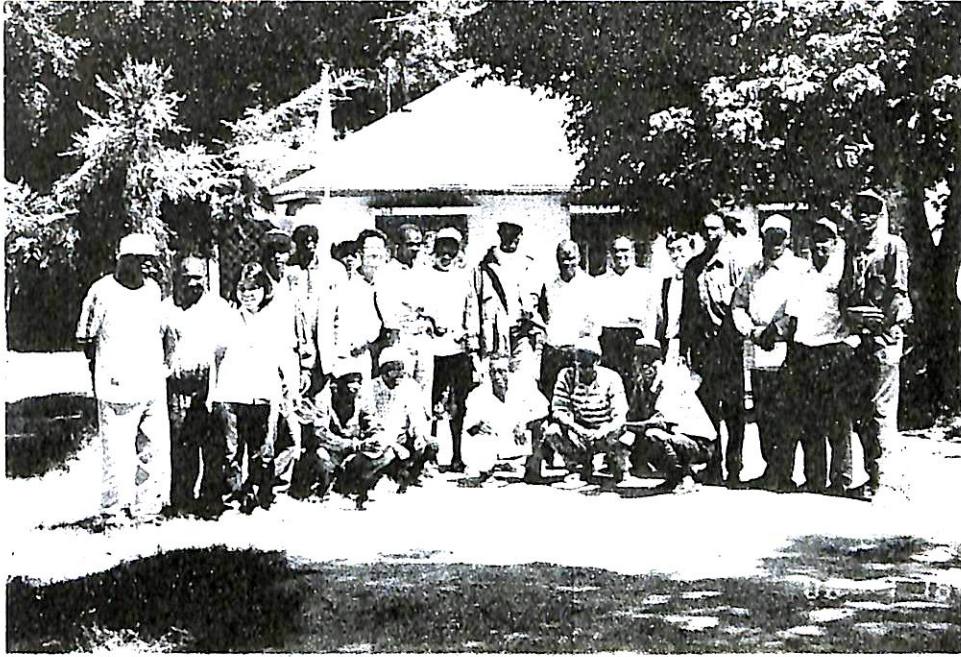
One of the field at the Nairobi University-Israel Kibwezi Farm.



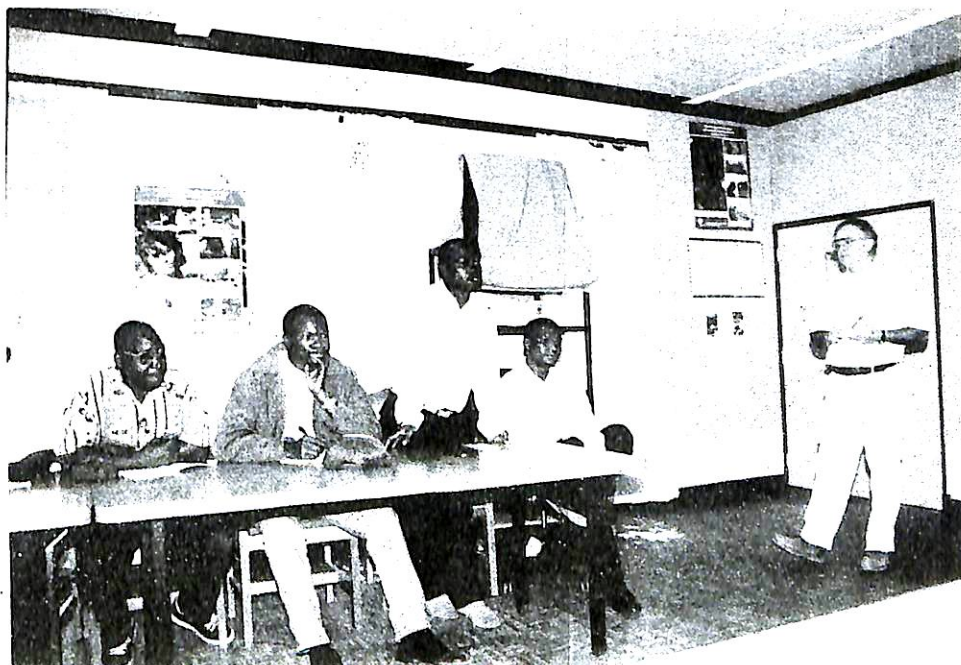
Kipepeo Project showroom-Gede



Fish farming at the Bamburi nature trail.



A group photograph outside Taita Taveta District Forest Office, Wundanyi.



Keen to get every word, the group receiving a lecture from Taita Taveta Agricultural Project Officer.



The group visited Coastal Forest Conservation Unit office at Kilifi



KEFRI Regional Research Centre Gede-Malindi

