AGROFORESTRY PLANNING WORKSHOP FOR EASTERN HIGHLANDS AND LOWLANDS

WORKSHOP PROCEEDINGS

HELD AT TORORO DATIC ON 29th NOVEMBER, 2001

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February 2002

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1.0 INTRODUCTION

Agroforestry research and development in Uganda was established at the end of 1986 through the Agroforestry Research Network for Africa (AFRENA) for Eastern and Central Africa [Hoekstra 1988]. The objectives of AFRENA programme were:-

- To develop appropriate agroforestry technologies for the highland areas in East and Central Africa
- To develop the national and regional capability to plan, formulate and implement agroforestry research.

Agroforestry research and development has for the past 12 years concentrated in the two farming systems of southern highlands (Kabale, Rukungiri) and Lakeshore crescent (Mukono, Wakiso, Mpigi).

The European Union is currently funding agroforestry research and development in the three farming systems in Uganda. These include the Southern drylands (Ntungamo, Mbarara), the Eastern Lowlands (Tororo, Kumi, Soroti, Pallisa) and the Eastern Highlands (Mbale, Sironko, Kapchorwa). The workshop was planned to discuss agroforestry research and development activities for the year 2002 for the two farming systems of the Eastern lowlands and the Eastern Highlands. The participants were drawn from development organizations (NGOs and CBOs), the district departments, farmer groups and the staff of the agroforestry programme of the Forestry Resources Research Institute (FORRI). The workshop was held at Tororo District Agricultural Training and Information Centre (DATIC) and was attended by thirty-eight (38) participants (see appendix 1).

1.1 Workshop Objectives

The main objectives of the workshop were: -

- To refine agroforestry workplans for year 2002 for the Eastern Lowlands and Eastern Highlands of Uganda.
- To consult with and get input to the workplans from the various stakeholders and clients
- To identify areas of collaboration with the various stakeholders such NGOs, CBOs and others in the development and promotion of agroforestry in these farming systems.

1.2 Workshop Structure

This was a one-day workshop that was conducted on the 29th November 2001. It was organized in the following format: -

Morning: Session 1 – Introductions and NGO Presentations

- Welcome by the District Agricultural officer (DAO), Mbale
- Presentations on the environmental issues in the districts of Tororo and Mbale
- Presentations by development partners
- Presentation on past agroforestry activities in the two farming systems
- Presentation of the draft work plans for the two farming systems

Afternoon: Session 2 – Group and plenary discussions

- Group discussions on the proposed work plans. Two groups were formed, one for the lowlands and the other for the highlands
- Presentation of group discussions during plenary
- Discussion on the way forward
- Closing

The results of the workshop are contained in the rest of the proceedings.

2 SESSION ONE: INTRODUCTION AND NGO PRESENTATIONS

2.1 Introduction

The District Agricultural Officer Mbale District, Ms Modesta Nambuya chaired the morning session and welcomed all the participants to the workshop. The day's programme was introduced and members present introduced themselves for purposes of getting to know each other. The composition of participants was as follows: -

- Agroforestry team from FORRI
- District Environment Officer – Mbale
- District Environment Officer - Tororo
- District Forest Officer – Tororo
- District Forest Officer – Mbale
- District Veterinary Officer – Mbale
- District Veterinary Officer - Tororo

- District Secretary for Production and Marketing - Tororo
- District Agricultural Officer – Mbale
- District Agricultural Officer - Tororo
- Centre Managers of various ARDCs and DATICs (Serere, Bulengeni, Tororo)
- Representatives of NGOs;
  - Soroti Catholic Diocese Integrated Development Organization (SOCADIDO)
  - Tororo District Farmers Association (TODIFA)
  - Food Security and Marketing Project (FOSEM)
  - Heifer Project International (HPI)
  - AFRICA 2000 Network
  - Mount Elgon Conservation and Development Project (MDEP) of IUCN

After the introductions, a call for brief presentations on environment issues and activities of various NGOs present was made.

2.2 NGO Presentations

2.2.1 Environmental Status in Tororo District by Okello Wasike, District Forest Officer Tororo

Mr Okello Wasike gave a brief presentation of the environment issues in Tororo district. He highlighted the following issues: -

- Heavy cutting of trees in the district for charcoal production to meet the high demand from Kenya where trees have almost been finished. As such, it was indicated that Kenya's tree product requirements are met by Tororo district.
- Serious overgrazing which has caused serious soil erosion.
- Poor cultivation techniques leading to soil erosion
- Encroachment on the wetlands for rice cultivation leading to river siltation
- Poor disposal of waste material especially in Malaba; use of polythene bags as toilet paper and the latter disposed off in river Malaba.
- Oil or petrol spillage's into water bodies in the district
- Lack of tree cover in the whole district. The case in point is that of Mvule (*Melicia excelsa*) trees that are being depleted due to furniture making (chairs and desks) for schools in the district without replanting.

He also noted that framers in the area are not willing to plant Mvule trees because of its long rotation period. They tend to prefer *Grevillea* and *Eucalyptus*, which are fast growing. It was observed that awareness creation on the need to plant Mvule and other trees is very crucial.

Question: What is the composition of the environment committee in the district.

Answer: It is composed of the Secretary for health and environment, but directorate of health leads the committee.

2.2.2 *Presentation by Mr Mateba Gibutayi, Centre Manager Bulegeni ARDC*

The manager reported that agroforestry activities have been undertaken at Bulegeni ARDC. *Grevillea robusta* and *Calliandra* have been planted along contours. The trees provide organic matter for crops. They were initially established to provide fodder for livestock but there are no animals, hence *Calliandra* uses are limited to soil amendment and firewood. The trees have reached seeding stage and the intention is to collect seed to sell to farmers. Other trees include *Eucalyptus*, but termites seriously attack them. *Markhamia spp* also exist. *Grevillea* is becoming popular among farmers due to its fast growth. It is normally planted with coffee and bananas. As for soil fertility improvement, researchers in the area have come up with a legume called mukuna, which provides a lot of biomass. Kei apple is planted for fencing and seeds are readily available.

Question: Have you made any efforts to promote other local species that people are interested in?

Answer: Yes, a few local spp. eg. *Markhamia* have been promoted. There is need for more local species but the seed is not easy to get.

Question: Which tree species have you inter-cropped with crops.

Answer: *Grevillea robusta* is inter-cropped in bananas and at demonstration centres

2.2.3 *Presentation by Mr Opio Christopher, Manager Tororo District Agricultural Training and Information Centre (DATIC)*

The manager informed participants that Tororo DATIC is under the district administration. The major activities at the centre are: -

- Training of extension staff and farmers. Youth farmer groups have been identified in 4 sub counties
- Training of primary seven school leavers
- In crop section, demonstrations for commercial production (agribusiness) have been started. There is multiplication of cassava, banana suckers, pineapple suckers and upland rice.
- There are demonstrations on horticulture for vegetable production and teaching, and a section for agroforestry where trees have been planted.
- A nursery for coffee exists, one hectare of land has been planted with coffee while another 6 are planned for future expansion.
- A mother garden for citrus, mango and avocado has been established.
- Training has been conducted in the fields of animal traction, ox-cultivation and ox-training

Question: As far as agribusiness is concerned how are you making money and what are the activities you train in?

Answer: Money is made in multiplication of groundnuts, pineapples, cassava, and bananas. In training farmers we select the projects and offer training in record keeping, marketing, processing and enterprise selection. However we do not connect farmers to markets yet. The farmers do the marketing themselves.

Question: What is the role of DATIC as a government collaborator?

Answer: DATIC collaborates with relevant government departments like fisheries, forestry and agriculture i training and information delivery. There are about 17 stakeholders in the district that act as resource persons i training. Collaboration is mainly in setting up of demonstration centres.

2.2.4 *Presentation by Mr Okurut Akol Herbert, Centre Manager Serere*

The manager reported that the centre is one of the new additions by NARO in the last phase and has been inactive, thus activities have not been initiated. The centre's mandate is the districts of Soroti, Katakwi, Kaberemaido, Tororo and Kumi. He highlighted the following issues: -

- Basically, the centre exists but no steering committee has not yet been put in place.
- The initial activities will focus on seed multiplication and collaborative activities with various stakeholders
- A need assessment in Teso region indicated several constraints such as decline in soil fertility, soil degradation and deforestation leading to lack of building poles and shortage of fuelwood.
- The need for agroforestry interventions in the area was highlighted.

Question: What is the difference between the mandate of a DATIC and an ARDC, and is there no duplication of work between the two?

Answer: DATICs are more for training and information. There are 12 ARDCs in the country. The centre happens to be in the same zone with ARDC. DATIC identifies its role of training and information while complimenting ARDC activities.

Question: What are your plans now that the centre is starting to operate?

Answer: The centre is normally managed by a committee appointed form the district. Plans are underway to put the committee in place and get things moving.

2.2.5 *Presentation by Ms Anna Nakayenze, District Environment Officer Mbale*

The topography of Mbale district can be divided into three different types. The Mbale plains which is an undulating plateau, the Upland which rises from the upper level of the plains to form hills and valleys standing above the plains, and the Elgon mountain and its related features with magnificent deep and narrow valleys and ridges.

The Elgon provides the most important drainage system in the eastern region with numerous streams descending from the mountain through narrow valleys and a series of rapids. It forms an important hydrological system of the Kyoga basin, and therefore the Nile basin. There is a high population in the highland areas with fertile volcanic soils that are of low erodibility. However, given the steep slopes and over cultivation of these slopes, the scenario seems to be changing and land degradation is wide spread throughout the district.

During the survey of environment issues in the district, land degradation was catergorized into two forms i.e. loss of soil fertility and soil erosion. 58% and 48% of the villages ranked soil erosion and loss of soil fertility respectively amongst the three priority environmental problems. Soil erosion problems were more prominent in the highlands whereas loss of fertility was more prominent in the low lands, however, it is wide spread throughout the district.

The major causes of soil erosion were identified as: -

- Cultivation of the steep slopes with lack of soil conservation measures
- High population density on the slopes of the Elgon and farmers are cultivating the steepest slopes.
- Poor farming practices such as ploughing or tilling up and down hill
- Scarcity of land which has led to the cultivation of marginal areas and over cultivation destroying the soil structure
- Ignorance on soil conservation practices and inadequate extension coverage
- Deforestation

The main causes of loss of soil fertility included:

- Loss of fertile soil through soil erosion
- Poor farming practices
- Lack of soil conservation practices such as terracing, inadequate crop rotation
- Inadequate extension service delivery to promote good farming practices

Environmental Effects

- Excessive use of inorganic fertilizers especially in the Elgon region for even traditional crops like maize. It is a water catchment area and water pollution through misuse of agro-chemicals is very likely. Massive soil movements such as landslides in the Elgon region lead to displacement of people and property; loss of lives and property, silting of riverbeds and wetlands in the low lands.
- Low crop productivity leading to food insecurity
- Due to food insecurity, more areas have been opened up for cultivation reducing the overall tree cover in the district. Furthermore, wetland cultivation has increased and some of these are drying up and losing the wetland characteristics.
- Devegetation/deforestation for the expansion of land for cultivation leads to high velocity water flows from the hilltops and in absence of any soil conservation measures escalates the rate of soil erosion.

Environmental issues in Mbale district

- Poor health and sanitation
- Soil erosion
- Deforestation
- Loss of soil fertility
- Pollution
- Riverbank degradation
- Poor waste disposal
- Conflict with protected areas
- Poor fishing practices

Challenges facing agriculture in the district

- Changing roles
- Ineffective extension delivery
- Low awareness levels by farmers
- Lack of ownership of resources
- Ignorance
- Very low adoption rates

Question: How do you reconcile fertilizer application and then food insecurity?

Answer: Those who apply fertilizers are very few. For the majority who do not apply, the maize yields are always poor yet, they rely on sale of maize products to get money to cater for other needs. There is also a problem of people selling at low prices during harvests and forgetting to reserve for famine periods so food insecurity remains at the end of the day.

2.2.6 Presentation by Mr John Gongo, District Environment Officer Tororo

Soil erosion is the physical removal of soil by wind or water. Land degradation on the other hand is the partial or total loss of land productivity in both qualitative and quantitative terms. This is a broader phenomenon that results from a range of processes such as soil erosion, flooding, pollution and salinization, among others. The soils in Tororo district are predominantly ferrasols (Ferrallitic soils) which has the following characteristics: - low (CEC) cation exchange capacity, negligible mineral reserves (bases can only be held by the presence of clay and organic matter for their fertility), required proper maintenance of top soil, deficient in nitrogen and acidic (low PH) due to (Al and fe) presence.

The 1999 survey carried out (District state of Environment report) came out with the following issues on soil/land:

- Deforestation (de-vegetation) or loss of tree cover was observed in 58 out of 66 parishes surveyed.
- The problem is very grave in Tororo and West Budama counties. The land is open and firewood is scarce.
- Soil erosion is wide spread in the whole district and the leading is Tororo county followed by West Budama and Bunyole. Tororo County is on high ground, which slopes towards West Budama and Bunyole. There is population pressure on land resulting in continuous cultivation without fallow period, cutting of vegetation to open land for cultivation, the land use is unplanned, in that the few hilly slopes are cultivated and left bare resulting in water run-off. The Ferrasols can only be maintained by vegetation cover.
- Soil fertility decline: This phenomenon is observed by the declining crop yields on the continuously cultivated land. The issue is wide spread according to the 1999 survey on state of environment report. One soil analysis carried out in Chegen village Kwapa sub county gave the following results on organic matter:
- The result showed that organic matter is lower than the critical level required to hold the bases and maintain fertility. The area is without tree cover and is permanently under cereal cultivation
- Wetland cultivation has reached an alarming proportion. The 47% of the wetlands have been converted to arable land what is remaining are dry valleys. This is mostly in Tororo county and some parts of West Budama.
- In such dry valleys erosion has filled it with some and therefore loss of productivity in the land is observable on stunted crops. Water for livestock especially during dry season is scarce.
- There is very little done in the past to reverse the trend of wetland reclamation. Although the WID (wetland inspection division) of Ministry of Lands, Water and Environment has come out with 10 year programme, it is yet to start.
- There is a recent high demand for pit sand and bricks from the wetland for the SFG – primary school building programme. Most wetlands are already having pits/ditches left behind by sand and brick extraction.
- Forest timber: The SFG Primary school building programme demands high volumes of Mvule timber for roofing, doors and windows and desks. Collectively, 14,000 m3 of timber is needed for 10,000 classrooms with 18 desks per classroom. At 25% saw milling recovery rate, this is equivalent to 56,000 m3 of logs. If this trend is left to persist, there shall be no Mvule trees in the next 10 years perhaps short term timber trees must be grown using bye-laws and desks with metallic stands and top desk be soft wood board.

Efforts to reduce soil degradation

There is need to have agroforestry programme that will provide organic matter to the soils. There is a species problem. Observations show that farmers tend to reject or ignore the "exotic" agroforestry tree species. The local natural species shade a lot of leaves hence provide a lot of organic matter. Local species preferred include Ficus species such as *Ficus natalensis, Ficus ovotam Sur, Ficus benjamina,* etc. The exotic ones such as *Sesbania sesban* can be used for other purposes such as control of striga weeds. On farm trials for these species could be conducted.

Local use planning would be another area of investment. Meanwhile the country waits for the national land use policy the idea and knowledge of land use is with the technical staff. At district level this can be developed, to ensure hilly slopes and wetlands are protected and appropriate enterprises are allotted.

There is need to have a programme of short term timber tree growing to take care of school desk and building programmes. The degraded land/soils could be the area of target.

Question: Is population pressure an issue as regards environmental degradation?

Answer: Yes, population pressure exists leading to greater demands for more land for cultivation, hence the reason why wetlands are being encroached upon.

Question: What efforts are being undertaken to solve the soil erosion problems?

Answer: We have got collaboration with green manure initiatives in the district.

2.2.7 Past agroforestry Activities in the two farming systems by Dr Okorio John (FORRI)

Past activities

The NARO Agricultural Research and Development Programme (ARDP) started Agroforestry activities in Tororo and Mbale districts in 1995. The major activities of this programme were to disseminate appropriate agroforestry technologies for soil conservation, fodder banks and boundary planting and farmer training. In Mbale district, the programme operated in Bulambuli county, Bulago sub-county in the parishes of Bunasafwa and Bumwambu. There were 437 contact farmers who planted about 198,000 seedlings of *Calliandra, Grevillea, Casuarina* and *Alnus*. In Tororo district, the operational area of the programme was West Budama County, Tororo sub-county in the parishes of Nyangole and Kidera. There were 956 contact farmers who planted about 220,000 seedlings of *Grevillea, Casuarina and Maesopsis*.

ARDP

New Initiatives

With funding from the EU to FORRI agroforestry programme, the new activities are supposed to cover the following farming systems: -

- Eastern lowlands (Tororo, Pallisa, Soroti, Kumi, Katakwi)
- Eastern highlands (Mbale, Kapchorwa, Sironko)
- Southern dry lands (Ntungamo, Mbarara)

Objectives of the workshop

- Refine workplans for the coming year, that is 2002, for the
  - Eastern lowlands
  - Eastern highlands
- Identify areas of collaboration with partners in these areas
  - seed supply
  - capacity building

Expected Outputs of the workshop

- Refined workplans for the coming year for
  - Eastern lowlands
  - Eastern highlands
- Areas of collaboration with partners in these areas identified

2.2.8 *Presentation of the draft workplans by Dr Kagorora Patrick, Agroforestry Programme*

The workplans were presented in two parts, that is the eastern highlands and the eastern lowlands as described below

a) Work plan for Eastern Highlands (Mbale, Sironko, Kapchorwa)

1. Research

Output	***Activities***
On farm wood production	• Tree growth and impact assessment of earlier on farm plantings • On farm evaluation of various species for pole and timber production • On farm evaluation of crown and root pruning
Improved soil management	• On farm evaluation of shrubs for soil conservation • On farm evaluation of trees/shrubs for improved fallows and rotational wood lots
Improved fodder	• On farm evaluation of fodder species • Survey of indigenous fodder trees/shrubs
Trees with high value	• On farm evaluation of temperate fruits (apples, pears)
On farm biodiversity	• On farm evaluation of tree biodiversity

2. Dissemination

Out put	***Activities***
Germplasm supply	• Seed acquisition and seedling production
Knowledge on Agroforestry	• Awareness workshop for local and opinion leaders in the zone • Farmer exchange visits

3. Capacity building

Output	***Activities***
Capacity building	• Training of Development partners and farmer trainers in the zone • Student attachments

4. Monitoring and Evaluation

Output	***Activity***
Monitoring	• All activities
Evaluation	• At specified period

b) Work plan for Eastern Lowlands (Tororo, Kumi, Soroti, Katakwi)

1. Research

Output	*Activities*
On farm wood production	• Tree growth and impact assessment of earlier on farm plantings • On farm evaluation of various species for pole and timber production • On farm evaluation of crown and root pruning
Improved soil management	• Use of trees/shrubs as improved fallow • On farm experimentation with organic and inorganic sources for soil fertility management
Trees with high value	• On farm evaluation of mango and citrus varieties
On farm biodiversity	• On farm evaluation of tree biodiversity

2. Dissemination

Out put	*Activities*
Germplasm supply	• Seed acquisition and seedling production
Knowledge on Agroforestry	• Awareness workshop for local and opinion leaders in the zone • Farmer exchange visits

3. Capacity building

Output	*Activities*
Capacity building	• Training of Development partners and farmer trainers in the zone • Student attachments

4. Monitoring and Evaluation

Output	*Activity*
Monitoring	• All activities
Evaluation	• At specified period

Suggestion: There is need for a survey on on-farm biodiversity to know what tree species farmers already have on farms to know whether there is pressure and demand

2.2.9 *Presentation by Dr Okoth John Vicent of Tororo District Farmers Association, (TODIFA)*

TODIFA is a branch of UNFA (Uganda National Farmers Association). Its area of operation covers the whole of Tororo district. It brings all farmers in the district under one voice. The farmers become members upon registration. The members select office bearers as follows:

- Parish Executive committees (PEC)
- Sub county executive committees (SEC)
- District executive committee (DEC)
- Executive board members

The link with the grass roots and co-ordination of TODIFA activities is done by extension link farmers, contact farmers and special interest groups. The administrative office has a Co-ordinator, District Agricultural Advisor, Accountant and field staff (either veterinary of agriculture) each at sub county level

Operation of TODIFA

TODIFA offers: Capacity building, Mobilisation and sensitisation, Agricultural advisory services, Agricultural shows, Demonstrations and farmer trips, and Farmers administration

Farmers are given basic training on farming, marketing and management. The farmers are trained by their executives or extension link farmers or contact farmers of special interest group of facilitator workshops. Seminars and meetings are used for capacity building. Training concentrates on crop and animal farming, field demonstration and marketing. TODIFA works in collaboration with other organs in the district- NGOs, district departments and local council. The administrative and organisational structure can definitely allow the operation of agroforestry because the farmers can be trained.

The main constraint encountered by TODIFA is inflexibility of the farmers i.e. poor conversion of acquired knowledge and skills into practice. They usually tend to maintain their old ways of farming. We believe that TODIFA can collaborate with AFRENA to initiate agroforestry activities in Tororo district as far as mobilisation, sensitisation and capacity building are concerned.

Question: Your structural organisation seems to have nobody on Natural Resources or Forestry. How do you think AFRENA may collaborate?

Answer: We have an organised structure and we could assist in information dissemination of AFRENA activities.

Question: Do you have your own staff or you work with district

Answer: Have own staff

Question: Do you offer any material facilities to your clients?

Answer: Ours is only in capacity building

2.2.10 Presentation by Mr Ewatu Vincent, SOCADIDO Regional Development Promoter

Soroti Catholic Diocese Integrated Development Organisation (SOCADIDO) is the development arm of Soroti Catholic Diocese. The diocese is made up of 4 districts of Kumi, Katakwii, Kaberemaido and Soroti.

Vision: Integral development of persons in the diocese

Mission: To empower the communities in Teso to achieve sustainable socio-economic development

Motto: Victory over poverty

Long term objectives

- To strengthen community initiatives in order to improve their abilities to access and manage the available resources more effectively and efficiently.
- To promote sustainable food security at household level through the transfer of modern farming techniques
- To advocate and lobby for the marginalized groups (women, children, PWDs) and youth.
- To ameliorate environmental degradation by promoting the integration of woody perennials in the Teso farming systems
- To promote community based health care services

With the above objectives SOCADIDO is currently running an integrated programme targeting 26,000 households in the 3 years (2000-2002). Agroforestry being part of the integrated programme operated under the following objectives: -

- Rehabilitated the degraded land in the diocese through tree planting so as to remove some pressure from the natural vegetation

- Improve upon the nutritional well being of people in the diocese through self sufficiency in food and other products
- Improve upon the incomes of rural household through sustainable and diversified production.

ACTIVITIES
The main activities include the following: -

- Sustainable nurseries and demo plots
- Availing credit in king to farmers
- Assisting farmers establish their own nurseries
- Offering training to development groups
- Training farmers on different aspects of agricultural production process
- To equip demonstration centres e.g. model homes and model farmers
- Linking farmers to other development actors for support
- Conducting follow-up visits to farmers fields

TARGETS are mainly individual farmers, established groups i.e. women, farmer, youth and PWD groups and Institutions and schools

STRATEGIES
Fifteen (15) organisational nurseries are in place and operational

- Katakwi 6 (2 major and 4 sub nurseries)
- Otuboi 3 (1 major and 2 sub nurseries)
- Kumi 4 (2 major and 2 sub nurseries)

Soroti 2 major nurseries: These nurseries have average production of 25,000 seedlings of various categories per year per site. The staff is decentralised and co-ordinated at regional level by regional community development promoters (CDP) where a "region" is government district. Each nursery has a nursery manager called CDA (Community Development Animator) and each catholic parish has a maximum of 3 CDA who deal with implementation of the activities. The organisation has 5 demonstration units located around major nurseries.

OUTCOMES

- A good number of farmers have adopted practices like woodlots, home gardens, avenue planting, strip cropping, organic farming
- Over 60 private nurseries operate in the diocese
- Many farmers have adopted Lorena cook stoves technology

- Tree seedlings produced are for poles, fruits, timber, ornamental, hedges and for medicine.

CHALLENGES

- Termite attack
- Drought and strong winds
- Cultural believes
- Insecurity in some areas e.g. Katakwi
- High expectations from communities
- Limited support by the programmes to the farmers and running of activities by the staff.
- Limited market for agricultural products
- Seed security for some species.

Question: Are your extensionists not over stretched as they have more than 1 sub county?

Answer: We have trained farmer extensionists and provided them with motorbikes for ease of mobility.

Question: It is noted from your presentation that institutions are the highest consumers of tree products, have you had any activities with them?

Answer: Yes, we have tried to introduce energy saving stoves in communities and schools.

Question: In encouraging farmers to have own nurseries, how do you ensure sustainability of seedling production? In other words do you teach them business skills and how to market their products?

Answer: We always offer integrated training where marketing is also involved. With time we hope to scale down and let private farmers take over. However, marketing of seedlings is still a problem.

2.2.11 Presentation by Mr. Ayo Peter, Mount Elgon Conservation and Development Project (MEDP)

The Mount Elgon Conservation and Development Project (MEDP) is funded by NORAD, the Norwegian Government Agency for International Development and is currently implemented by the Ministry of Tourism, Trade and Industry. The project partner institutions are Uganda Wildlife Authority (UWA), International Union of Conservation of Nature (IUCN), the World Conservation Union and the District Administrations of Mbale, Sironko and Kapchorwa. IUCN provides technical assistance and is responsible for reporting and financial management.

The project field activities are implemented by either park staff or district extension and technical staff. The project staff and a relatively smaller number of office support staff receive back up from the IUCN Uganda Country Office and the East African Regional Office.

The goal of the project, since inception, has been to conserve the Mt. Elgon and its Ecosystem for both the present and future generations. In the ongoing bridging phase (2000-2001) the project outputs have been the following:

- Development of a community based resource management approach
- Sustainable development activities linking conservation and development
- Management and protection of Mt. Elgon Nationa Park – Boundary re-survey, boundary planting, law enforcement, purchase of communication and ranger equipment. park staff training and up keep.
- Public awareness programmes (exploration centre and school out reach programme)
- Planning and management capacity of institutional partners strengthened in environment management in the districts through support to DEOs of Mbale, Kapchorwa and Sironko.
- Monitoring and evaluation. M & E systems are developed in conjunction with UWA, local communities, internal and external reviews
- Tourism development

As an activity agroforestry, involving local communities adjacent to the park, is the domain of the sustainable development (Out of Park) section. In the bridging phase, 2000-2002, the sustainable development section of the MECDP supported district extension staff (2 SDCs and 10 SMS and 10 PBEWs) with logistics such as motorcycles, fuel and repair and maintenance and bicycles and subsistence allowances to support target groups in 6 parishes in Mbale and 12 parishes in Kapchorwa. The target groups were trained by sustainable development staff to establish tree nurseries of *Eucalyptus, Grevillea, Maesopsis, Leucaena* and *Sesbania* and to plant seedlings in plots or woodlots as household alternatives to park resources.

Constraints by the project

- Maintaining the group cohesion and the commitment is not easy. A case was mentioned where an original group of 20 people disintegrated to 1 who happened to be owner of land where the group nursery was situated.
- Farmers' low attitude to adoption
- Farmers have limited land and have no where to plant trees
- Limited logistics: *Grevillea* seed in highly demanded yet there are no resources to purchase the seed.
- Lack of skills and knowledge of extension workers. Most extensionists are theoretical rather than practical.

2.2.12 Presentation by Ruth Ogodia, Heifer Project International Mbale

Heifer project in Mbale district started in 1990 with two groups of YWCA Mbale and Bugusege Livestock group. Currently it is assisting the following five groups.

- YWCA Mbale Heifer Project
- Abayudaya Women project – covering central Mbale
- Shunya – Bushika in Manjiya county
- Buda in Bubulo county
- Kifango in Bugobero.

The total number of farm families assisted is now 620. The Objectives of the programme is to

- Improve on human nutrition especially the children
- Empowerment of women
- Create self reliance at family levels

The main activities of the programme are

- Training of beneficiaries in animal husbandry, soil and water conservation, agroforestry, soil fertility and farm exchange visits
- Provision of in-calf dairy heifers and goats to beneficiaries
- Tree nursery establishment especially fodder trees and multipurpose trees
- Biogas construction (doom shaped)
- Monitoring all field activities

The major collaborators are District Veterinary Office, District Agricultural Office and District Forest Office

Major Challenges are

- Lack of tree seeds
- Limited knowledge in agroforestry
- Termites and other pests
- Difficulty in getting seed for particular tree/shrub species for farmers
- Cost of seedlings is not affordable by the poor who happen to be the majority
- Limited sensitisation of farmers. Most do not know the value of trees.

Question: Based on your experience what have the women to say on the labour intensive nature of zero grazing?

Answer: The whole family has been sensitised to participate. Men for instance cut the feeds for the cows while the women and children participate in feeding the cow.

2.2.13 Presentation by Fred Kabuye, Africa 2000 Network

Africa 2000 Network started operations in Uganda in 1990 with the aim of supporting community-based initiatives that are geared towards preserving the environment and promoting ecologically sustainable development. A2N has had activities in over 13 districts in the country. Todate it is strongly running projects in the districts of Iganga, Tororo, Kamuli, Hoima, Kisoro, Kabale, Kasese, Kabarole and Kyenjojo. Africa 2000 Network in Tororo operates 2 projects: poverty eradication through environmentally sustainable agriculture (PEESA) and the Integrated soil productivity initiatives through research and education (INSPIRE)

The PEESA project started in 1997 with activities in 2 sub counties of Kisoko and Osukuru. The objectives of the PEESA project are to:

- Provide knowledge and skills to enable farmers manage their environment sustainably.
- To improve on food security, produce adequate fuelwood and increase incomes
- Enhance increased access to credit facilities i.e. credit in kind
- To enhance replication of successful projects (technologies) where conditions permit.

The major activities run under this project include:

- Training in sustainable agriculture
- Promotion of agroforestry technologies with emphasis on farm nurseries, tree planting and biogas technologies.
- Credit support: - Credit in kind on a revolving fund basis inform of dairy cows, goats, improved chicken, planting materials (banana sucker, cassava stems, pineapples, etc.)
- Farmer to farmer exchange visits to enhance adoption
- Promotion of farmer training so as to train others to enhance sustainability and increased coverage

To date the PEESA heifer project has reached to over 6,000 farm families and it is still on-going.

INSPIRE PROJECT

Following collaboration with MUK soil science department, ICRAF, studies on soils revealed serious soil nutrient deficiencies of especially nitrogen and phosphorus. The same concern of poor soils in Tororo was also recognised by the agriculture department stakeholders operating in the district. These came together in strong partnership to try and address the soil fertility problems, and this gave birth to the INSPIRE project. Collaborators on this project include Tororo agricultural department, Africa 2000 Network, NARO (KARI, FORRI), CIAT/ TSBF, Sasakawa Global 2000, Tororo district farmers association, Plan International, AT Uganda, ICRAF and FOSEM.

The project is currently running in all sub-counties of the district. The on-going activities include: -

- On farm demonstration on improved soil fertility management involving both organic and inorganic methods
- Student attachments for research on some available options
- Baseline survey has been conducted to take stock of current farmers' practices and production levels.
- Improved fallow seed multiplication and distribution to farmers and ARDCs
- Farmer exchange visits to enhance adoption

Challenges

- Resources to conduct more farmer exchange visits.
- Diversification of tee species suitable for farmers (on farm biodiversity)
- Availability of several soil fertility improvement options
- Access to high value germplasm supply

Areas Africa 2000 Network wishes AFRENA-EU project to address

- On farm demonstrations for improved fallows on other crops other than maize / potatoes which have already been tried
- Germplasm supply
- Farmer exchange visits – inter district and inter country
- Training of development partners and farmer trainers
- Workshops with other stakeholders to share experience on agroforestry technologies and available options
- On farm evaluation of fallow species that have already been tried

3 SESSION TWO – GROUP AND PLENARY DISCUSSIONS

Two groups were formed during the afternoon session to discuss the workplans that been presented in the morning session. One group comprised participants from the Eastern lowlands and the other from the Eastern highlands. The purpose was to review the workplans and identify areas of collaboration with the various stakeholders, that is, who will do what and with whom. The group's findings were presented in plenary and are presented below

3.1 Eastern Lowlands group presentation

Output	***Activities***
1. RESEARCH	
1. On farm wood production	1. Tree growth and impact assessment of earlier planted tree species such *Grevillea* (Nyangole / Kidera) • Document information on the above i.e. reaction of attitude of farmers (data) 2. On farm evaluation of various species for pole and timber production e.g. Ficus 3. On farm evaluation of termite control methods 4. On farm evaluation of root / pruning crown 5. Establishment of tree species resistant to termites
2. Improved soil fertility management	1. Use of tree / shrubs as improved fallow • Seed (*Cajanus cajan, Tephrosia spp, Crotolaria, Mucuna, Sesbania, Calliandra, Leucaena, Tithonia* 2. Experimentation on organic and inorganic sources of soil fertility • Seed of green manure species • Trees that can shade leaves to improve O/M e.g. ficus scatered in crop fields • ISFM e.g. Qts, types (management)
3. Trees with high value	1. On farm evaluation of mango, citrus, avocado, papaya, Prunus africana, jack fruit, shear nut, butter tree, Macademia, etc. • Planting materials needed
4. On farm biodiversity	1. Evaluation of on farm tree diversity • Identification • Adaptation of identified tree spp

2. DISSEMINATION	
1. Germplasm supply	1. Seed acquisition 2. Seedling production Strategies: • Initially buy • Set up local seed stand (later) through identification of farmers to do that • Conservation of long term tree (Shear butter) • Initially have central nurseries. Later farmer based
2. Knowledge on agroforestry	1. Awareness workshops Strategies • Sensitisation (radio) • Demonstrations 2.Farmer exchange visits • Farmer field days • DATICS
3. CAPACITY BUILDING	
1. Capacity building	1. Training (partners and farmer trainers) • On propagation techniques - Seed collection, handling / storage • Nursery establishment • Agroforestry technologies
4. MONITORING & EVALUATION	
1. Monitoring and Evaluation	• Set baseline / targets / indicators/ inputs • Monitoring format / instrument in place • Review meeting / reports

Areas of Collaboration

Agroforestry Area	*Activity*	*Collaborators*
On-Farm wood production	Tree growth assessments	TODIFA, Africa 2000 (A2N)
	On farm evaluation of tree species for pole and timber production	SOCADIDO, Africa 2000 (A2N)
	On farm evaluation of root and crown pruning	SOCADIDO, FOSEM, A2N
	Establishment of tree species resistant to termites	SOCADIDO, FOSEM, A2N
Improved soil fertility management	Use shrubs as improved fallows	FOSEM, SOCADIDO, A2N
	Use of inorganic and organic fertilizers	SOCADIDO, FOSEM, A2N
High value trees	On farm evaluation of various fruit trees (mango, citrus)	SOCADIDO, FOSEM, A2N
Dissemination	Seed acquisition	SOCADIDO, FOSEM, A2N
	Seedling production (seed, seedlings)	TODIFA, SOCADIDO, A2N
Capacity building	Training in agroforestry	FOSEM, SOCADIDO, TODIFA, A2N

Comments on group 1 presentation

- It was suggested that activities should have targeted particular lowland areas in Tororo district, especially areas where the trees were earlier planted in 1995/96.
- It was further suggested that collaborators take up activities in which they are currently involved rather then accept to do everything.

Question: What is your coverage in area and staff?

Answer: Very thin staff e.g. one member of staff works closely with district extension staff.

Question: What constraints do you find in agroforestry and what do you see as AFRENA's contribution. In other words what in your program can AFRENA focus on?

Answer: AFRENA could focus on farm demos and in establishment of centralised tree nurseries at parish levels.

Question: Why had the group included the shear nut tree yet it seems to occur predominantly in the North.

Answer: The response from the group 1 members was that people from Katakwi preferred the shear nut tree for charcoal making. It was noted though that the tree is almost extinct in Kumi.

Question: There was demand to know whether the group thought about establishment of seed stands, centralised nurseries and modalities of who would be involved and in which activities?

Answer: The answer was that involvement would be identified later when activities have been taken up.

3.2 Eastern Highlands group presentation

Activities	Collaborators
Tree growth and impact assessment	Busano, Bulago, Bunasufa - MECDP
On farm evaluation of various species	HPI – Mbale MECDP – Kapchorwa and Sironko
On farm evaluation of crown and root pruning	DAO DFO
On farm evaluation of shrubs for soil conservation	Bushiyi – Bulucheke (MECDP) DAO, DFO – Lowland
On farm evaluation of tree / shrubs for fallows and rotational woodlots	KARI Demo at ARDCs Busiu – lowland Bulegeni – Upland Kaproroni – Elgon highlands
On farm evaluation of fodder species	HPI – Mbale MECDP- Sironko, Kapchorwa
Survey of indigenous	DVO HPI MECDP
Trees with high value	Plains – grapes, avocado, figs, tree tomato Upland – Apples, pears, plums Bulegeni – Nectarines, avocado Highland – Pears, nectarines Kaproroni – Plums, apples

On farm biodiversity tree diversity	DAO, DFO, MECDP, HPI
Germplasm supply	Corresponding partners already identified
Awareness workshops for local and opinion leaders	At ARDC DFO, NGOs, sub county chiefs, LCIII and LCV councillors
Production of farmer training materials and extension guidelines	NGOs
Training	HPI, MECDP, IRDI, Extension agents, farmer associations, AT
On farm evaluation termite and other pest infestation f identification of termite control measures	ARDCs, farmers

Comments on the presentation

- An activity of evaluating different tree species resistant to termites and other pests was thought necessary to be added to the workplans. It was suggested this activity be put under output of on farm wood production. The activity should be called "On farm evaluation of termites control measures".
- There was a point of information that in Kapchorwa, there are trees that are resistant to termites (DVO) Kapchorwa).
- On the issue of high value tree species, apples were suggested to be included for high altitude areas especially Kapchorwa.

Other collaborators identified were:

- Appropriate Technologies (AT) Uganda. AT works in the districts of Tororo, Pallisa, Lira and Soroti. On the whole, 19 districts are covered countrywide.
- Integrated Rural Development Initiative (IRDI) carries out activities on sustainable agriculture especially organic farming, biogas, improved stoves. In Mbale, they are based in 3 sub counties namely: Bukato, Bushika, Wabwa.

4 FOLLOW UP ACTIVITIES

- Finalise workplans (Kampala team) by December 2001.
- Follow up with NGOs on identified activities at least by Jan 2001
- Idenitify zonal activities in the areas of
  - ✓ seed supply
  - ✓ Training
  - ✓ Exchange visits: on this issue networking was highly recommended
- Produce a proceeding of the workshop and produce the final workplans
- Need to specify time frames within which final workplans will be implemented
- A suggestion was made for a need for a forum to sort out the clear time frames.
- A member clarified that we are looking at the next two planting seasons
- It was suggested that NGOs come up with more specific activities in relation to the workplans, so that together with AFRENA, implementation gets underway.

In his closing remarks, the DFO, Mbale thanked all participants and looked forward to a follow up and implementation to start.

Appendix 1: List of participants

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