



European Union



AU-IBAR



Farming in Tsetse Controlled Areas

FITCA



Environmental Monitoring and Management Component EMMC

Recommendations made by communities in Uganda and Kenya on how to improve the environment in their villages



2003 - 2004



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Introduction

The project FITCA “Farming in Tsetse Controlled Areas” encourage farmers not only to participate in the control of the tsetse flies for the reduction of Sleeping Sickness and Nagana but also in activities that improve farming methods and their livelihoods.

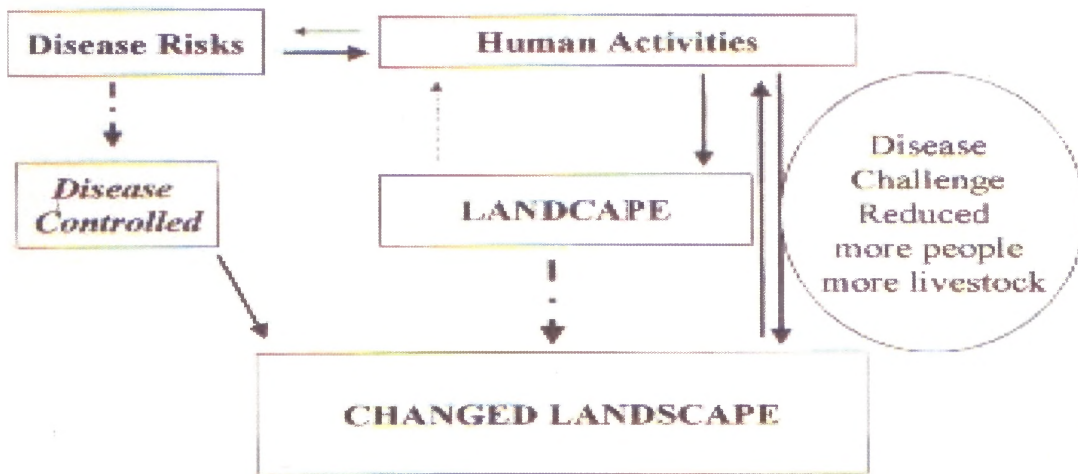
The FITCA-EMMC (*Environmental Monitoring and Management Component*) has the objective of ensuring that FITCA participates in the protection of environment and mitigates changes that have negative effects on the resources.

The following recommendations results from working group discussions during six workshops (two days each) held in Eastern Uganda and Western Kenya with a total of 450 farmers both men and women of all ages. Extension and Environmental Officers, as well as the village chiefs participated in the discussions.

Four major components of environment were considered:

- ❖ Vegetation and forests
- ❖ Land and soils
- ❖ Wetlands and water
- ❖ Animal wildlife and livestock

Diagram showing the interactions between disease control and environmental change



A photograph showing farmers who attended the workshop in Busia Kenya.

VEGETATION AND FORESTS

Goods and services

Forests and woodlands play a vital role in human survival in providing a) resources for maintaining livelihoods and b) services beneficial locally for individuals and communities. They also support rich and varied animal and plant communities.

The products that people find in forest and woodland includes:

Goods: timber for building, firewood, fruits and honey, medicines, bush meat, thatching grass and



pastures.

Services: shade, windbreak, habitat for birds, insects and other animals, protection of soil from water and wind erosion, protection of soil fertility, role in the cycle of water and climate, contribution to the beauty of landscape.

Changes over the years

Deforestation has strongly changed the landscape over the years, which has resulted in loss of forest and vegetation cover, and it continues to occur. Forests have been cleared for cultivation and old big trees have been cut down for wood.

People reported that the main consequences affecting their livelihoods includes:

- ❖ Native tree and forest products are less available or have disappeared.

- ❖ Scarcity of wood fuel sources
- ❖ Emergence of new plants and weed species that have become habitat for tsetse
- ❖ Infertile soils due to soil erosion leading to poor crop yields and low household food security
- ❖ Decrease in rainfalls, which have become unreliable and erratic.

Causes of changes

These changes are as a result of population increase, which has:

- Enlarged the area of land under cultivation,
- And augmented demands on the goods and services provided by forests, woodlands and vegetation leading to overexploitation.

Urbanization and human activity have played a major role in the decline of the forests and woodlands cover by creating unsustainable demands on goods and services from forests, woodlands

and vegetation, while wars have caused destruction of forests and vegetations.

Recommendations expressed by the communities

The need for special efforts in tree planting and afforestation was expressed by majority of people. The rehabilitation may be achieved by:

- ❖ Establishing tree nurseries at village level to serve as sources of planting materials, and recommending adapted useful species. Supporting the development of private tree nurseries, providing income to farmers.
- ❖ Encouraging communities to practice agro-forestry for different purposes, including woodlot plantation for fuel.
- ❖ Developing alternative source of fuel and encouraging energy saving *Jikos*.
- ❖ Prohibiting bush burning

- ❖ Encouraging schools to educate children on the importance of trees, the effects of destruction of forests, and the care of trees.

LANDS AND SOILS

Goods and services

Land and the soils are essential as plants and animals depend on it for survival. Land is a natural resource under certain ownership, and soil supports growth of crops and vegetation. Land acts as an asset that can be disposed by families to get money, while goods and services provided by vegetation are dependent on soils.

Changes over the years and causes

The changes that have occurred in lands and soils are: -

- ❖ Land fragmentation due to increase in



population

- ❖ Changes in land rights and ownership, also land grabbing
- ❖ Increase of monetary value of land
- ❖ Degradation of soil fertility due to continuous cultivation and reduction of fallow period
- ❖ Increasing dependence on inorganic fertilizers caused by the reduction of livestock number
- ❖ Emergence of new weed types like *Lantana camara*, *Striga*
- ❖ Soil erosion following overgrazing and

deforestation

- ❖ Clearing of catchment areas and river banks for new cultivations
- ❖ Expansion of cultivation of cash crops (tobacco, sugarcane, vegetables) that are sources of income.
- ❖ Increasing use of pesticides.

Impact of the changes on livelihoods

- ❖ The declining farm sizes can become uneconomical, leading to poverty,
- ❖ Women have been empowered and can own land, which has led to new income generating activities like poultry keeping and agro-forestry
- ❖ Natural vegetation as forests, woodlands and wetlands are decreasing, leading to loss of resources.

- ❖ Yields of food crops are decreasing or need more inputs

- ❖ The new cash crops become new sources of incomes

- ❖ Increasing risk of human poisoning and contamination of water by pesticides

Recommendations

- ❖ Improve the land tenure policies in order to reduce the land subdivision leading to uneconomical parcels and farms.

- ❖ Offer the farmers certainty of ownership for land by revision of land

tenure rules

- ❖ Educate farmers on better farming techniques like intercropping and rotation of crops
- ❖ Promote agro-forestry techniques in the farms and the plantation of woodlots with fast growing trees
- ❖ Promote zero grazing units and cultivation of pasture plants,
- ❖ Train farmers on methods of composting manure
- ❖ Organize communities to create environmental groups and to realize at village level soil conservation efforts like

terracing and strip farming,

- ❖ Train farmers on the safe use of pesticides

WETLANDS AND WATER

Wetlands are places with water always or are seasonally water logged.

Water includes rivers, ponds, lakes, springs, wells, underground water reached by wells and boreholes.

Goods and services

➤ Wetlands:

Goods:

- ❖ Papyrus and grasses for thatching and mats
- ❖ Palm leaves for baskets and ropes
- ❖ Sand quarrying, clay for pottery and brick making
- ❖ Grazing areas for dry season, salt licks

- ❖ Firewood

Services:

- ❖ Fertile soils for growing vegetables, root crops (arrow root), rice and sugarcane
- ❖ Habitat for wildlife (birds including migratory birds, mammals)
- ❖ Flood control and water cycling, water storage, water purification,

➤ Water:

Goods:

- ❖ Drinking water for human and animals
- ❖ Fishes

Services:

- ❖ Water for irrigation
- ❖ Transport, recreation (swimming)
- ❖ Habitat for wildlife (fishes, birds...)

Changes over the years

Wetlands:

- ❖ Increasing cultivation, settlements
- ❖ Drying up

- ❖ Cutting of trees in wetlands and river banks
- ❖ Flooding

Water:

- ❖ Water availability:

→ Positive: new water harvesting and distribution techniques (boreholes, piped water)

→ Negative: decline of water resources and spring water level (longer distances for women to fetch water)



- ❖ Water management:

→ Positive: development of latrines at households, sensitisation on dangers of unsafe water

→ Negative: water pollution, contamination by human activities and agro-chemicals, sedimentation due to erosion

- ❖ Fishing activities:

→ Positive: Introduction of fish farming

→ Negative: Decline in fish sizes, numbers and types caught, increase of water weeds (water hyacinth)

Recommendations

➤ Wetlands:

- ❖ Community to formulate regulations governing sustainable use of wetlands, to demarcate areas for agricultural and grazing activities
- ❖ Stop agricultural activities in areas where wetland is reducing in size
- ❖ Prohibit settlement in wetland
- ❖ Develop rice varieties capable of growing in upland areas
- ❖ Rehabilitation of habitats and afforestation

in lowlands, encourage soil conservation in uplands

- ❖ Prohibition of hunting until wildlife number build up
- ❖ Reintroduction of selected wildlife
- *Water:*
- ❖ Restock water with fish
- ❖ Encourage fish farming
- ❖ Construct earth dams at local level for irrigation
- ❖ Train farmers on better use and disposal of chemicals

ANIMAL WILDLIFE AND LIVESTOCK

Goods and services

Livestock and wildlife have from time immemorial played a central role in socio-economic and cultural life of African communities. They provide:

- ❖ *Goods* as food (meat, milk, blood, fish,



eggs, honey), other animal products (hide and skin, horn, local medicines)

- ❖ *Services* as support to agriculture (drought for ploughing and transport, manure for fertilising), economic advantage (living capital, income by marketing, job for livestock rearing), cultural ties (gifts, dowry, prestige), pollination, aesthetic and leisure (beauty of animals, hunting, tourism attraction).

They also participate in the balance of the ecosystems (preys and predators).

Changes over the years

➤ *Livestock:*

- ❖ Number of livestock: → increasing due to improvement of health control (veterinary services, medicines, vaccination, tsetse and tick control)
 - decreasing (pressure of nagana, tick born disease, Newcastle disease...)
- ❖ Conditions of livestock rearing:
 - improving management practices (zero grazing)
 - degraded access, quality and size of natural grazing lands
- ❖ Productivity of livestock: → improved by adoption of new or better breeds
 - reduced animal size due to inbreeding
- ❖ Income from livestock and livestock products:
 - improvement of market access and demand

→ increasing cost of animals for restocking, increased need for money

- ❖ Labour availability: → increased population in the villages,
 - less time to rear animals: young at school, adults working for cash, incidence of AIDS
- *Wildlife:*

Decrease in species sighted while others have completely disappeared due to over-hunting and

fishing (mammals, birds, fishes)

- ❖ Reduction in the number of migratory birds seen in most areas.
- ❖ Destruction of wildlife habitats like forests, woodlands and other vegetation types due to increased human activity

Recommendations

➤ *For livestock:*

The communities benefit more by keeping more livestock (food, income, energy, manure and other services). They want to be able to rear more animals (cattle, goats, donkeys, poultry, bees).



- ❖ Continued destruction of crops by primates; Reduced threat from wild animals (big predators, snakes)

Causes of changes on livestock and wildlife

- ❖ Rapid population increase leading to an increase in the total area under cultivation
- ❖ Encroachment and subdivision of land due to increased demand leading to intensified human wildlife conflict
- ❖ Increase of standard of living, better housing (bricks), better education (children at school), better health (more health centres)
- ❖ Increased poverty, increased need of money, degradation of exchanges and solidarity at community level
- ❖ Diversification of activities to get incomes
- ❖ Diversification of crops, increasing cash crops, need for more inputs for crops
- ❖ Reduction and degradation of natural areas (forest, bush, wetlands)

To reach these objectives, the following recommendations can be made:

Continuation of efforts aiming at controlling animal diseases (spraying cattle, vaccinations, treatments)

Establishment of pastures and fodder crops (napier, legumes), good management of grazing lands to avoid overgrazing. Improvement of feeding practices (salt and minerals, supplementation, zero grazing). Plantation of fodder trees

Improvement of breeds for getting higher animal productivity

For Wildlife:

Rural communities wish to maintain the capacity of getting products from wildlife (bush meet, fish, honey...), which implies the protection of natural habitats (trees, bushes and forests, ponds and rivers). They want to avoid the conflicts with wildlife (destruction of crops, threats of humans by predators, troublesome insects and parasites).

To address these issues, the recommendations are:

Afforestation, rehabilitating forests, planting

trees and woodlots, to protect or create habitats

Protection of natural ecosystems like bushlands, waters, riverine forests and even fallow

General recommendations

In addition to the above recommendations that deal with specific subjects, some general recommendations and proposals were expressed during workshops with the farming communities:

Local organisation:

- ❖ Encourage communities to form “*village environmental committees*” and/or “*common interest groups*” to deal with environmental issues at village level, co-ordinate efforts to reclaim back a healthy environment, and develop action plans aiming to environmental conservation and management.
- ❖ Institutionalise NEMA (National Environmental Management Authority) activities in the villages, in order to make operational



NEMA initiatives at grass root level through the training of the “*environmental committees*”.

Farming methods:

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- ❖ Improve agricultural farming methods through the activities of extension services and development projects like FITCA.
- ❖ Encourage intensified technologies to alleviate the need for land (crops with better yield, with better income), to reduce the increase of livestock



number (improved breeds, improved pastures, zero grazing) and to reduce the risk attached to climate variability and disease or pest pressure.

- ❖ Sensitise relevant authorities and interested NGO's to revive the market for cotton, sugarcane industries and other cash crops.

Information and training:

- ❖ Develop the farmer awareness on the environmental issues and the good management and use of natural resources by repeated training, sensitisation campaigns and communication initiatives.
- ❖ Respect and progressively enrich the indigenous knowledge on good agricultural practices and resources use. Develop training of farmers and stockists on the safe use, handling and disposal of insecticides and pesticides.

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