

PD-ABQ-344¹ R-

Masindi District

UGANDA

*A Pilot Project
for
Environmental Protection and
Economic Development*

A Proposal

Submitted to:
Grants Management Unit
Action Program for the Environment

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NOVEMBER, 1995

ACRONYMS

ACDI	Agricultural Cooperative Development International
COP	Chief of Party
DDC	District Development Committee
DEC	District Environment Committee
DTPC	District Technical Planning Committee
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EPED	Environmental Protection and Economic Development Project
GMU	Grants Management Unit
GTZ	German Technical Cooperation Agency
MFNP	Murchison Falls National Park
MIS	Management Information System
MSGGA	Masindi Seed and Grain Growers' Association
NEIC	National Environmental Information Centre
NEAP	National Environmental Action Plan
NEMA	National Environmental Management Authority
RC	Resistance Council
UNP	Uganda National Parks
USAID	United States Agency for International Development
USP	Uganda Seeds Project
VOCA	Volunteers in Overseas Cooperative Assistance

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Executive Summary

The Environmental Protection and Economic Development (EPED) pilot project is a 20-month effort which will assist with building Masindi District's capacity to manage, monitor, and protect its natural resources. A basic assumption is that poverty is a driving force in the illicit use of protected area resources. EPED will help set in place institutions and structures needed to increase income and will start with communities in sub-counties around the protected area. EPED will strive to make quick progress and will seek further support for a additional 18 months to reinforce those components or activities which have proven to have significant impact.

Murchison Falls National Park (MFNP) and the adjacent Bugungu and Karuma Game Reserves were once rich in wildlife. MFNP was formerly the première game park in East Africa, but the loss of most of its larger fauna in recent decades has greatly diminished its tourist potential. If illicit resource use is eliminated, it will be well into the next century before the area's biodiversity attains former levels. The German development agency, GTZ, is now engaged with financial and technical support to UNP and the Game Department for the integrated management of the protected area which includes the Park and the Bugungu and Karuma Game Reserves.

It is of central importance that the integrity of the protected area is maintained and allowed to regenerate. During this period of regeneration and beyond, protection of the park and game reserves will require open communication and full cooperation with the District.

This project takes the view that strategic interventions in Masindi District, chiefly in the areas of resource management and economic development, will be crucial in the long term protection of MFNP and the game reserves. Other options, such as ecotourism, can generate modest revenues, but such revenues are unlikely to penetrate far into the local community

The goal of the EPED pilot project is to lay the groundwork for long term protection of Murchison Falls National Park (MFNP) and the Bugungu and Karuma Game Reserves. The project's purpose is develop and test effective measures for the reduction of the root causes of biodiversity degradation: the illicit use of protected resources by a subsistence population. This will be achieved through pilot activities to raise income in buffer zone sub-counties and by supporting environmentally-sound district planning.

The project has the following key objectives:

First, strengthen the capacity of Masindi District to effectively plan and manage its resources and stimulate sustained environmentally-sound economic growth;

Second, establish the basic conditions for long term protected area integrity by supporting the development of environmentally-sound and economically viable land use

systems in buffer zones; and,

Third, engender a sustained rise in real income of rural men and women, commencing in sub-counties adjacent to the protected area.

These objectives will be accomplished by providing:

Technical and financial support to the district for environmentally-sound planning;

Assistance with sustainable land use planning and a pilot activity involving the voluntary relocation of up to 125 households currently residing in and around the protected area; and

Technical and financial assistance needed to catalyze the district economy and stimulate sustained annual increases in the return to agricultural labor.

The project will be managed by ACDI in collaboration with the National Environmental Information Centre. Short-term technical assistance also will be provided by Volunteers in Overseas Cooperative assistance (VOCA) through another grant.

1. Introduction

1.1 The Protected Area

Murchison Falls National Park (MFNP) comprises an area of 3,860 square kilometers. The park is roughly bisected by the Victoria Nile which originates in the east at Lake Kyoga and flows through the park in a westerly direction for 115 kilometers from Karuma Falls over the dramatic cataract at Murchison Falls near the park's center and onward into Lake Albert on Uganda's western border with Zaire. MFNP extends north of the river into Gulu District and to the south into Masindi District which is the focus area of the EPED project. The protected area within Masindi District is extensive. MFNP is bordered by the Bugungu Game Reserve in the south and west and by the Karuma Game Reserve in the south and east. These areas add another 913 sq.km. bringing the total protected area under combined UNP and Game Department management to 4,723 sq.km. An important forest reserve, the Budongo Forest (57 sq.km.) which is managed by the Forest Department, also joins this larger protected area in the south-center at the juncture of the two game reserves.

MFNP was gazetted as a national park in 1952, soon after Uganda's National Parks Act was passed. The area was once rich in wildlife and had remained largely untouched by human activities because of the tse-tse fly and endemic sleeping sickness. A severe epidemic struck the area between 1898 and 1915 which resulted in the evacuation of some 13,000 square kilometers on both sides of the Nile. In 1910, the area south of the river was established as the Bunyoro Game reserve; this was expanded north of the river in 1928 to cover a total area of 4,750 sq.km. and renamed the Bunyoro and Gulu Game Reserve. The tse-tse fly continues to be a problem, chiefly because control measures failed during recent periods of disruption. At present, World Bank-financed activities are reestablishing control measures.

The park was once abundant with large mammals. Elephants numbered about 14,000 in 1973; today this population is about 300. Other major species have shown similar declines, with current populations at 70 giraffes and 1,500 buffalo. Both white and black rhinoceros, once found north of the Nile, have been hunted to extinction. The park also contains unknown numbers of Uganda kob, waterbuck, Jackson's hartebeest, oribi, reedbuck, warthog and hyena. Sightings are infrequent; most of these species are now found in the north-western peninsula between the Albert and Victoria Niles. Chimpanzees inhabit the adjacent Budongo Forest and the smaller Rubongo forest area, located in the southern half of the park.

If poaching is eliminated it will be well into the next century before major wildlife species approach former levels. However the park retains a number of significant tourist attractions. These include launch excursions up river from Paraa to Murchison Falls which give a superb view of this spectacular natural wonder. The river trip also provides frequent sightings of crocodiles and hippos as well as lions and buffalo, which occasionally come to the river to drink. The park also harbors a substantial repertoire of birds which are of especial attraction to ornithologists world-wide.

Uganda National Parks (UNP) has established a comprehensive management plan for 1992-1997 with cooperation from the European Union. The German development agency, GTZ, is providing financial and technical support to UNP and the Game Department for the combined management of the protected areas of MFNP and the Bugungu and Karuma Game Reserves. GTZ support has been on the order of \$1 million per year with a projected budget for 1995-1996 of \$1.6 million. GTZ allocations for 1994-1995 included support for management, operations, a tourism carrying capacity study and development plan, construction, salaries, equipment and roads. Planning for the 1995-1996 financial year has significant allocations for management, GIS, research and monitoring, as well as roads and operations costs. Budget allocations are chiefly for activities inside the protected area.

MFNP was once the première game park in East Africa. The loss of most of its larger fauna in recent decades has diminished its tourism potential. Nevertheless, the dramatic sight of Murchison Falls and the pervasive sense of remote wildness at the heart of the Nile river system make the park and surrounding areas attractive. Current capacity in the area is 190 beds. Estimates given in the Integrated Tourism Master Plan estimate 270 more beds by 1997, and 310 more by the year 2002 (a total of 770).

Most visitors pass through Masindi to enter through the area's southern sector. Tourist concessions have been sold to private developers. AMA Ltd. is establishing a lodge outside the park on the south shore near the Victoria Nile delta to the west of Paraa. Nile Safari Camp is now operating a few kilometers from Paraa. Hot Ice Limited is using four cottages in the Rubongo Forest area. UNP also maintains a small and very basic tourist camp at Paraa with 23 beds. Most tourists visit on day-trips and return to the hotel in Masindi town. According to the Tourism Master Plan (1993), MFNP accounted for less than one percent of the 15,761 tourist nights in Uganda in 1992. Tourism development is still in its early stages and some growth is realistically anticipated. Revenues from tourism will be limited in the years to come and will offer relatively little in the way of economic incentives to the surrounding population to protect the area.

It is of central importance that the integrity of the protected area is maintained and it is allowed to regenerate its flora and fauna. During this period of regeneration, protection of the park and game reserves will require open communication and full cooperation with the district. Much hope has been placed on ecotourism to provide income or compensation to impoverished people surrounding protected areas. In contrast to the ecotourism model, which assumes a flow of benefits from the park to the district's communities, it is more likely to be the case that income from non-tourism related development will play the predominant role in protecting the park. Although tourism and revenue-sharing may eventually contribute to the local economy, a dynamic and expanding district economy based chiefly on market agriculture and related agribusiness, will be the principal factor in maintaining the area's integrity for the foreseeable future.

1.2 Masindi District

Masindi, Hoima, and Kibale Districts are the heartland of the old Bunyoro Kingdom which was administered after the British conquest as part of Equatoria, a province of the Anglo-Egyptian Sudan. British intrusions throughout the last quarter of the 19th Century were met with strong resistance. The initial British conquest employed Sudanese mercenaries to subdue the population, which was largely decimated. Subsequent colonial policies during the Protectorate period after the Kingdom's conquest were also harsh. The pre-independence history of Bunyoro was a cruel one which left the area underdeveloped and backward. And, in more recent years, Masindi's location on the north-western edge of the Luwero Triangle, the vortex of the anti-government resistance movement, brought renewed suffering from the 1970's through the mid-1980's. Today, Masindi District remains on the periphery of national development.

Masindi District comprises an area of 8,087 sq.km. situated between Gulu District in the north and Hoima District in the south. Its western boundary is the eastern shore of Lake Albert. The 1991 census gives a population of only 261,000 people, representing more than 30 ethnic groups. The population growth rate is low, only 1.4 percent, with an abnormal preponderance of males in the population, 51 percent. The district is populated predominately by indigenous Bunyoro people, who numbered just over 100,000 in 1991. There is a significant population of 14,000 Alur people from the north. The Alur have a tradition of hunting and have settled around the Diima area of Mutunda along the protected area's eastern boundary. About one-third of these were born in the district. Also noteworthy are 5,000 Bagisu, most of whom are cultivating in the protected area; roughly one-half of these people were born in the district. Other ethnicities, including Acholi, Langi, Iteso, as well as settlers from the Sudan and Zaire are found in the area, the latter two groups found in large refugee camps in Mutunda.

Masindi has a favorable climate and generally very good soils. The district is well watered with about 1,500 mm. of rainfall over two growing seasons. The heaviest rains normally fall in April-May and August-September. Agriculture dominates the local economy, with two-thirds of the population engaged in subsistence farming. Insecticides and fertilizers are not commonly used. The most important crop is maize (100,000 t.). A wide variety of other crops is also cultivated. This includes: groundnuts (10,000 t.); millet (10,000 t.); sorghum (1,000 t.); cassava (30,000 t.); as well as lesser but significant quantities of beans and soybeans, sesame seed, sunflower, peas, tobacco (10,000 t.), and cotton (10,000 bales). A large commercial sugar plantation and refinery at Kinyara near Masindi town will begin production in 1995.

The poor economic situation of the district is revealed in the national statistics. Schools are in dilapidated condition, usually without tin roofs or furniture. Literacy among those aged 10 years and above is 52 percent. Some 37 percent of those aged 6 years and over have never attended school. Among these, women and girls account for two-thirds. Only 5.5 percent of the population lives in urban centers (Masindi, Kigumba, and Kijura). Seventy percent of

houses have grass roofs; 88 percent have rammed earth floors, and 93 percent use wood as the source of fuel. Only an estimated 28 percent of the district's households have access to safe water. Health facilities are inadequate with too few and ill-equipped dispensaries and hospitals.

Transport and communications are poor. Modernization of the telephone system is underway and will soon replace the hand-crank system now in use. The main road from the Gulu highway to Masindi town is *murrum* (hard-packed earth) and is difficult to negotiate in the rainy seasons. Secondary and feeder roads are generally poor but passable. Most rural transport is by bicycle.

2. Problem Statement

At present, the protected area made up of Murchison Falls National Park and the Bugungu and Karuma Game Reserves is highly vulnerable to increasing encroachments by poor people who depend on its resources for survival. The necessities of subsistence for approximately 1,000 families within or adjacent to the protected area in the district does not bode well for the long term protection of biodiversity. These growing families, many of whom originally migrated from other regions to escape the civil strife of the 70's and early 80's, have had little choice but use protected resources as part of their subsistence strategy. These include water, timber, game, and grasses for thatch and pasture. The lack of alternative economic opportunities (especially the lack of access to titled farmland, agricultural credit, and a favorable marketing structure) represent a formidable obstacle to the economic self-reliance of these communities and their ability to live in harmony with the natural resource base of the surrounding area. Without new opportunities, it will simply be impossible for them to "grow" their way out of a meager livelihood based on subsistence agriculture supplemented by protected resource use, such as woodcutting and hunting.

District management will play a pivotal role in maintaining the integrity of the protected area's southern boundaries and safeguarding biodiversity. It will take at least a decade for the protected area to regenerate and realize its full potential as a national and international treasure. District management's capacity to protect the park and the reserves will depend on its ability to create the conditions for achieving a steadily improving standard of living for its constituents. Aggregate increases in real personal income will naturally lead to an acceleration in economic growth reflected in improved roads, utilities, telecommunications, hotels and other services. These improvements will ultimately attract more visitors to the district and the park.

Masindi District, although one of the poorer districts of Uganda, has excellent climatic and soil conditions and sufficient economic resources and infrastructure to achieve the critical mass of business activity needed to drive its own economic growth and attract outside investment. The Masindi Seed and Grain Growers Association (MSGGA) is an important member-owned

business which can serve Masindi's economic development. This development must be supported by effective local- and district-level planning and management, and a modest amount of agribusiness credit targeted on the introduction of a vertically-integrated agricultural marketing system.

As described below, the project will focus on addressing the key constraints to effective district planning, the lack of attractive economic alternatives for encroachers, and the absence of viable upstream linkages between small holders and the market.

3. Project Overview

3.1 Project Goal and Purpose

The EPED pilot project is an 20-month effort to build Masindi District's capacity to manage, monitor, and protect its natural resources. A basic assumption is that poverty is a driving force in the illicit use of protected area resources. During its 20-month pilot phase, the EPED project will identify practical and effective ways and means of raising income among people living in the buffer zone sub-counties.

The goal of the EPED pilot project is lay the groundwork for long term protection of Murchison Falls National Park (MFNP) and the Bugungu and Karuma Game Reserves. The project's purpose is develop and test effective measures for the reduction of the root causes of biodiversity degradation: the illicit use of protected resources by a subsistence population. This will be achieved through pilot activities to raise income in buffer zone sub-counties and by supporting environmentally-sound district planning.

3.2 Project Objectives

The key objectives of the project are.

First, strengthen the capacity of Masindi District to effectively plan and manage its resources and stimulate sustained environmentally-sound economic growth;

Second, assist the district to establish the basic conditions for long term protected area integrity by implementing environmentally-sound and economically-sustainable land use systems in buffer zones; and,

Third, initiate pilot economic activities to increase income of rural men and women in sub-counties adjacent to the protected area.

3.3 Technical Approach

The EPED project will be implemented by ACDI in collaboration with and the National Environmental Information Centre (NEIC). Additional short-term technical assistance will be provided by VOCA through another grant. The project team will collaborate with the GTZ-supported Murchison Falls project and with USAID's IDEA project. A project steering committee will be formed to advise on policy issues. Committee members will be chosen in consultation with the GMU, USAID and the district authorities.

ACDI will be responsible for overall project coordination and provide long-term professional staff. This includes the chief of party and a senior district planner, who will be supported by ACDI. There will be a consultant sociologist that will work closely with the team throughout

the life of the project ACDI short-term consultants will assist with project MIS and an environmental impact study. VOCA volunteer consultants will provide expertise in agribusiness development. The NEIC will assist the project and the district with training and materials needed to put in place a sub-county based environmental monitoring system.

The project will work closely with the Masindi District authorities to attain the project goal and purpose through implementation of three mutually-reinforcing components. These are:

- 1) Technical and financial support to the district for environmentally-sound planning;
- 2) Assistance with the voluntary relocation of up to 125 households currently residing in and around the protected area; and
- 3) Technical and financial assistance needed to catalyze the district economy and stimulate sustained annual increases in the economic return to agricultural labor.

The following sections detail the activities and inputs needed to realize each component.

First, the project will **strengthen Masindi District planning capacity** to manage resources and to incorporate environmental management into the district's development plan. The project will provide technical support to the Masindi District administration to build its capacity to plan and manage land and resource use and orient the district towards environmentally-sound development in the years to come.

The EPED project will strengthen planning capacity by supporting a full-time senior district planner and a planning office charged with the development and institutionalization of two key functions. The first is **environmental planning**, which includes the important aspect of local government coordination and cooperation with central government departments charged with managing the environment and the country's protected areas. This will focus initially on land-use planning and the establishment of modalities for communications and joint decision-making needed to ensure viable cooperation between the district and the protected area. The second key function of this component is **facilitating environmentally-sound economic growth** over the longer term. Establishment and institutionalization of district planning will build on lessons learned through pilot activities and serve as a platform for expanding benefits to the larger district.

The second component will **assist the district with a pilot effort in sustainable land use which will include voluntary relocation of up to 125 families** now living in the subcounties adjacent to the southern boundary of the protected area. This component will assist with land surveys and give families eight-hectare parcels needed to provide a rational and economically-viable foundation for land and natural resource use in sub-counties around the protected area. The relocated households will become the first small-holder members of the Masindi Seed and

Grain Growers Association. The goal is to draw people away from the protected areas by offering them sufficient land and integrating them into remunerative economic activities

Secure land tenure will be a critical factor in the success of this pilot effort to harmonize the relationship between small-holders and the protected area. Research¹ on land tenure in the district shows that many people are squatters paying rent to landlords. One of the attractions of the protected area is the absence of rent. Recent years have witnessed a movement of outsiders purchasing and registering large tracts of land, effectively changing small-holder farmers into squatters. It is rare that a small-holder has the means to survey and register a small plot of land.

Insecure and undefined tenure coincides with haphazard land use patterns and confines producers to short-term strategies, from season to season and from crop to crop. This has a negative impact on soil fertility, water retention and timber conservation. It hampers growth and investment and it clearly works against establishment of an effective planning function in sub-counties. Planning in the sub-counties is severely constrained; local government, business, and civic institutions at this grass-roots level are weakly-organized and resource-deficient.

Resettled households will be provided with plot survey information, but will be responsible for registering titles and title fees. One thousand hectares of new and fertile land will be made available in this pilot activity. This also will serve to develop District capability to design and implement land titling and rationalization schemes in the future. Established according to a carefully-conceived land development plan, these first 1,000 hectares will serve as a model for environmentally-sound development based on a constructive co-existence between people and protected areas.

The third component will focus on **economic development**, initially by obtaining higher farm-gate prices through improvements to grain production, storage and marketing. Stimulation of sustainable grassroots economic growth in the agricultural economy of sub-counties around the protected area, and eventually for the district as a whole, is basic to establishing a constructive relationship between people and protected areas. This last component will serve to diminish the economic exigencies which encourage illicit use of resources in the protected areas.

It is clearly unrealistic to expect people living in abject poverty to readily support UNP and Game Department efforts, especially if these efforts run counter to the hand-to-mouth exigencies of their precarious subsistence. Efforts to sensitize or educate people surrounding protected areas about the benefits and importance of their environment will yield meager results until people enjoy a reasonable standard of living, founded on food security, financial self-reliance, and steadily-increasing real income. While welfare-oriented measures given in

¹ Bazaara, N. "Land Policy and the Evolving Forms of Land Tenure in Masindi District," *Centre for Basic Research*, Kampala, Working Paper No. 28, June, 1992.

exchange for cooperation, such as the provision of schools and clinics, certainly provide much-needed services to the community, they have little chance of producing significant changes in behavior, or of being sustained over the long-term without tangible improvements to the local economy. Economic growth, seen in a real and persistent rise in income at the household level, is a fundamental pre-condition to initiating and sustaining cooperation and stability in the relationship between people and protected areas.

3.4 Collaboration with other donor activities

The German development services will have two volunteers working in the buffer zone communities. One will be based in Paraa and will work with communities north of the Park; the other is in Masindi, but will be working with the communities near Lake Albert. Their activities will be largely educational, sensitizing people to the environmental issues.

The EPED project team and GDS will meet regularly to discuss details of collaboration. These discussions will be coordinated through the district planning office since that office has responsibility for the coordination of environmental activities and projects in the district.

While the core support for the Masindi Seed and Grain Growers will be provided through the EPED project, the IDEA project will assist with marketing information and facilitating links with Kampala-based grain exporters. The low-value crop specialist for the IDEA project will walk the new MSGGA manager through actual negotiations with grain buyers. The IDEA project also will work with the MSGGA members to upgrade the quality of the seed that they are producing. This will be of great benefit to the farmers in the district; currently seed quality does not meet international standards and it one of the reasons that on-farm yields from "improved" seed continue to be low.

In addition, district authorities have suggested that bimonthly meetings that would include representatives of all the projects with environmental or agricultural components that are operating in the district. This would facilitate coordination among projects and would keep district authorities abreast of activities in their district.

4. Component 1: Strengthening District Planning for Environmental Protection and Economic Development.

Decentralization of most central government functions to Uganda's districts is already underway. Working through the Ministry of Local Government, Uganda is transferring much of the planning and decision-making authority to the districts. Each district is governed by a district resistance council (or RC-V). The council is headed by an elected district chairman who is supported by elected counsellors and a technical committee (DTPC), composed of chief civil servants from line departments or ministries. Counties and large municipalities (with the

exception of Kampala which is a district in itself) are headed by an RC-IV Chairman and supported technically by municipal and district civil servants. Each sub-county is headed by an RC-III Chairman and a committee of seven elected counsellors and heads of lower RCs. The lower RC-II and RC-I councils correspond to parishes and villages respectively. The minimal corporate unit under decentralized administration is the sub-county, or RC-III. The resistance council structure is essentially a pyramid with an information flow from the RC-I grassroots up to the RC-V.

Decentralization devolves decision-making down to the sub-counties (RC-III) and provides for the retention of 50 percent of taxes at the sub-county level. This tax money is intended to support management and planning at the local level where many needs can best be identified, assessed, and resolved. The Ugandan model for decentralized local government has great potential, especially if management and coordination functions are well supported.

However, decentralization of most central government functions to the districts has left a gap between the district administration and the management of protected areas. The UNP reports to central government headquarters at Entebbe, although the Game Department will report to both the district authorities and Entebbe headquarters after decentralization. Sub-county RCs report to the district. A mechanism for coordination is provided in the decentralization legislation which places responsibility for environmental and natural resource issues under the district development committee (DDC) and the district environmental committee (DEC). Representatives from UNP, Game, Forest and other natural resource departments are members of the district technical planning committee (DTPC) which gives technical input for development and environmental planning. The environmental committee is being established and an environmental officer is being hired. At present Masindi District's economy and modest annual budget of about \$400,000 cannot support an experienced senior planner. The District, however, is in the process of hiring a junior level planner who will work under the guidance of the project-supported senior planner.

The project will provide 20 months of support to Masindi District through a project team based in the planning office. The EPED team will be composed of a chief of party (COP), a senior district planner, a consultant sociologist and two fieldworkers. The district will provide a junior level planner and an environmental officer to complete the planning team.

The COP will have overall responsibility for the planning, management and coordination of all three project components. One of the very first tasks of the COP will be to establish critical paths for component implementation and set up a comprehensive management information system for tracking reactions and impact, making course corrections and reporting.

A MIS specialist will be contracted soon after the team is established at Masindi to design and familiarize the project team in the use of a computer-based management information system. Working with the COP, and with reference to the critical paths for each component, the

consultant will construct a computer-based management information system which will incorporate the following streams of data:

1. Socio-economic impact indicators, using data collected through the RC-I's and supplemented by studies undertaken by project fieldworkers;
2. Environmental indicators, established by the EIS expert and monitored by project fieldworkers;
3. Biodiversity status indicators using data from the Game Department and UNP monitoring of encroachment and impacts from the peripheral population;
4. Performance and progress of economic development activities supported by EPED will use data tracking performance of the MSGGA business development vis-a-vis benchmarks on the business development plan; and
5. Project financial data tracking expenditures and levels of effort will be provided by the project accounting function.

This system will provide project management and USAID with sufficient up-to-date information to link expenditures and effort to impacts and change.

Working closely with the COP, the senior district planner and junior planner will draft a plan and implementation procedures for the pilot voluntary relocation. They will work with the district technical planning and environmental committees to implement land-use models and environmental planning for new land areas to be established in project Component 2 (Voluntary Relocation, discussed in the next section).

A consultative mechanism between protected area management and the district will be facilitated through the RC system. UNP/Game Department input to the District Development Committee and the District Technical Planning Committee will assure that protected area concerns are considered in district planning. This will be reinforced by UNP and Game Department membership in the District Environment Committee now being established through the National Environmental Action Plan. Communication with the community-level is assured given the RC system's wide grassroots base.

During the 20-month pilot phase, the project will implement an environmental monitoring system in the sub-counties surrounding the protected area. This information will be needed for development of a comprehensive district economic development plan. Information from the environmental monitoring system will serve both environmental planning and economic development ends and will be put into operation in collaboration with the National Environmental Information Centre (NEIC), which is responsible for national-level environmental monitoring as established in the USAID-supported Ugandan National

Environmental Action Plan (NEAP). The NEAP has recently taken the institutional form of the National Environmental Management Authority (NEMA)

The district planning team in cooperation with NEIC will organize and assist in training RCs who manage local government at the sub-county level and below. The planner also will liaise with Game, UNP, Forestry and other natural resource departments. In the post pilot phase, it is anticipated that the district planning office will consolidate environmental information in the form of a district development plan. Having completed the groundwork for planning and management, the district will be in a good position to attract environmentally-sound investment.

5 Component 2: Sustainable Land Use - Voluntary Relocation.

Masindi District will set a precedent among Uganda's districts by allocating up to 1,000 hectares of open land, surveyed into parcels of 8 hectares, to up to 125 families living in the subcounties around the southern border of the protected area. This pilot activity will serve to establish a working model for stable tenure and improved production through voluntary relocation of families now dependent on protected resources. The pilot relocation program will serve to familiarize the district planning team and administration with all aspects of land rationalization and relocation needed to develop a stable and productive agricultural economy. Having gained practical experience, the district will be able to move forward in the future on longer range plans to establish a secure and productive agrarian base with the capacity for sustained growth.

At least two factors play an important role in motivating people to use protected resources. The first is poverty; the second is the absence of secure land tenure. As noted above, there is strong and ample evidence to suggest that insecurity of land tenure attracts small-holders to protected areas.

Game Department surveys undertaken during boundary delimitation activities indicate that as many as 3,000 people currently live within the protected area. These surveys have identified some 475 households cultivating about 2,500 hectares within the Game Reserve. Data from these surveys shows that the great majority of encroachers are cultivating less than 3 hectares, although a few have established large tracts on the order of 30 hectares. These households also herd cattle and small ruminants; most supplement income and nutrition by hunting, wood-cutting, and charcoal-making.

An estimated 500 Banyoro, the original inhabitants of the area, live inside the reserve in Pakayni and Kigumba sub-counties where they predominate. Members of many other ethnic groups have settled in and around the protected area, principally in the sub-counties of Pakanyi, Kigumba, Kiryandongo, and Mutunda on the southern and eastern borders of the reserve. These peoples include the Alur in Mutunda sub-county, who were displaced from the West Nile area about ten years ago, during the Obote II regime. Although they do not live within the reserve, they are settled on the east side of the Gulu road boundary. Hunters by tradition and experienced soldiers from the Amin army, they are renowned for the practice of witchcraft, and are frequently accused of banditry and highway robbery. This sub-county is also the site of a large refugee camp of people displaced from the southern Sudan and Zaire.

The Bagisu predominate numerically among encroachers. This group migrated to Masindi District in the mid-1980s from Mbale District and the Mount Elgon area where land scarcity, evictions from the Mount Elgon National Park, and violent incursions by the Karamajong drove them from eastern Uganda. Most of these people initially settled outside the protected

area near Kikube in Kiryandongo sub-county, but were evicted and moved into the reserve when large tracts of land in the area were allocated to the National Resistance Army farm

Other groups in the area include Maragolis who originate in Kenya. These people were settled in the district in the 1950's and were initially employed in construction of the Gulu railway. They number about 1,000 people, of which a few are encroachers.

The Game Department, which manages the reserves and serves as the first line of protection around the MFNP, recently re-established and posted official boundaries. The Game Department has made a list of all encroaching families inside the reserve, noted the extent of their land use, estimated livestock populations, and made an inventory of dwellings. The immediate future of encroachers is uncertain. Discussions are underway concerning the feasibility of adjusting the Game Reserve boundaries. It will undoubtedly be some time before the Government of Uganda reaches a final decision on this.

However, boundary adjustments alone are only a temporary solution to the problem of illicit resource use. The central problem for most encroachers is too little land and insufficient income to adequately support the family. As a result, the use of protected resources figures in the household economy: wood cutting for timber or charcoal, herding, hunting and the like. The problem will very likely worsen over time as land holdings are further fragmented to provide land for adult sons. Whatever the adjustments are to the Game Reserve boundaries, economic exigencies of survival and land use patterns will remain unchanged.

A pilot sustainable land use program with voluntary relocation of up to 125 families will demonstrate the benefits of a rationalized land use system. Rather than forcing people to leave the protected areas, the goal is to draw people away by offering them an economically viable alternative. The pilot program will show that the illegal use of protected resources can be significantly diminished where adequate land with secure tenure, extension and technical assistance to increase productivity, and improved market linkages are present. In addition to benefits on the ground among resettled families, this modest voluntary program will give practical experience and training to the district for developing district land use policies which are environmentally sound and conducive to economic growth in the future.

District authorities have indicated that there are substantial areas of fertile land in Masindi District largely unoccupied by farmers or herders. These tracts are characterized by dense bush and are not easily accessible because of an absence of roads. However, this situation will not last indefinitely. As the list of ethnic groups demonstrate, Masindi District is attractive to people from all over Uganda. It is essential for the district's future development that environmental monitoring and land use planning are institutionalized now.

District authorities will make available a total of 1,000 hectares valued at US\$100,000 located within a radius of twenty kilometers of existing settlements and at least one kilometer from the protected area boundary for the relocation of up to 125 families. The areas proposed for

relocation are sparsely inhabited. The sub-county RC's have been consulted extensively in developing the pilot relocation program and have been authorized by the RC-V chairman to identify appropriate land areas.

The District has confirmed that it will assemble the necessary heavy equipment to establish an access road and site boreholes. The district surveyor will delimit parcels and provide survey data to the resettlement program. Land packages will be on the order of 8 hectares for up to 125 families. In addition, land will be designated for community use, such as women's groups, crop collection centers, and eventually schools, clinics, and community centers.

Environmental Impact Statement

The bulk of relocation in the area will take place during the first 14 months of the project. The pilot program will require an environmental impact statement (EIS). Discussions with GMU indicated that given the modest scale of the program, an EIS conducted by local experts to NEMA specifications would be in order. The district planning team, in conjunction with the EIS expert, will consult with Uganda Government authorities and USAID to ensure that relocation activities conform to environmental norms and regulations. The expert will also advise the COP and district planning team concerning identification, measurement and use of appropriate environmental indicators to be included in project impact monitoring and evaluation system and MIS.

Site Surveys and Infrastructure

The district surveyor and his team will be given modest support from the project for fuel and additional temporary personnel. The district surveyor will be responsible for providing a detailed map of the relocation area and for making clear delineations on the ground.

An estimated 15 kilometers of core access road will be needed to open the area and provide access for drilling and siting boreholes. The project will provide 8 boreholes, a ratio of 1 borehole to about 100 people. Boreholes and wells are a basic need, given that much intrusion into protected areas is to use springs and streams for domestic needs and livestock. Adequate water supply is especially important to women, who bear the responsibility for household water supply. Discussions with UNICEF and district authorities indicate that UNICEF can provide additional boreholes at the district's request.

Pilot project resources can provide only minimal road access to the area. Additional feeder roads are of obvious importance for developing an expanded and improved grain production and marketing system. Discussions have been held with the USAID officer managing the Uganda Feeder Roads program in the Ministry of Local Government. District authorities have contacted the Feeder Roads program to request support.

Voluntary Relocation

Priority in the selection of families to be resettled will be given to those: (1) who are now located in the subcounties on the southern border of the protected area; and (2) who have small holdings (under 4 hectares). In the event that more than 125 families apply, selection will be made by a lottery conducted by Masindi District authorities

The RC structure (especially the RC-III, II, and I levels) will manage much of the relocation and will resolve conflicts at the appropriate community level with the assistance of the project team and the consulting sociologist. A working group will be established for monitoring and oversight of the voluntary relocation program. This group will include the chief of party, the senior district planner, the junior district planner, the consulting sociologist, the RC-V Chairman, and representatives of the Game Department and National Parks.

The objective of this component is to draw people away from the protected area by offering them a better economic alternative. Planning at the sub-county level can be oriented to zoning land-use along the perimeter of the protected area for woodlots, controlled harvesting of grass for thatching, and other appropriate community uses. Hands-on experience and lessons learned in the sub-counties around the protected area will serve to develop a practical model for future expansion to other sub-counties in the district.

Stability of land tenure in the post-project period will depend largely on the ability of these farmers to reinvest in the development of their holdings. This means that markets must remunerate production at a level which provides sufficient income for reinvestment in modest production technologies and the expansion of areas under cultivation. This problem is addressed in the next section.

6. Component 3: Economic Development

The project will focus initial economic development efforts on the southern and south-eastern sub-counties of Pakanyi, Kigumba, Kiryandongo, and Matunda where encroachment and human pressures on the protected area are most severe. These sub-counties also have the greatest potential for immediate economic development. It is expected that in the post-pilot period, the district planning office will turn attention economic development in the lakeside sub-counties of Buliisa and Biiso.

Pakanyi, Kigumba, Kiryandongo, and a large part of Matunda form the Masindi "maize belt." This area is fertile, well-watered, and capable of producing a wide range of crops with good yields, using minimal inputs. Domestic and regional demand for cereals, especially maize and beans, is very strong. Drought and political instability have dramatically reduced production in a number of neighboring countries. It is highly likely that for several years the World Food Program will be a significant and reliable buyer of grains in Uganda. Neighboring Kenya has growing potential as a commercial market, given its structural food deficit in grains. In addition to maize, the wide variety of crops grown in Masindi, which includes soybeans (500 t.) and sesame (300 t.) in 1994, have a growing market.

In spite of strong and expanding markets for maize and other agricultural commodities, returns from agricultural production in Masindi District have been minimal for small producers. Interviews and discussions with groups of small-holder farmers in a number of communities in sub-counties around the protected area quickly and universally revealed post-harvest prices are very low. Maize from the last harvest was bought by brokers at 40 to 50 Uganda Shillings (/=) per kilogram; this maize was resold within days to traders and exporters at prices upwards of 130/= per kg. The household economies of small farmers are chronically short of cash needed for very modest necessities, such as school fees, which at \$5 to \$15 per term are frequently cited as a major expense. Strapped for cash, small producers typically have no choice but to sell at low prices immediately upon harvest. Later, when household food grain stocks are depleted, maize is bought back at prices reaching 200/= per kg.

Yields on small farms are typically between 1.0 to 1.5 tonnes per hectare with gross per-hectare revenues on the order of 40,000/= (low yield, 1.0t. at 40/= per kg) to 75,000/= (high yield, 1.5t. at 50/= per kg). Using the above calculations, a small farm of 1 ha. will produce in two annual rainy seasons a gross revenue of between 96,000/= to 150,000/=, roughly \$100 to \$150 per year. Tractor ploughing, ideally done twice per crop, costs just over 60,000/= per hectare and is well beyond the means of small producers who sell their maize at very low post-harvest prices. This constraint promotes re-sowing unselected seed from the previous harvest (improved seed costs 13,500/= per hectare) and limits production to the capacity of available family labor. A more comprehensive analysis which gives profits and returns to labor for existing and improved cropping systems is provided in Annex (A-3).

The most important single intervention in district development that the project will promote is the transformation of small-holder subsistence-oriented production to market-linked agriculture. Although much of maize production is purchased by traders, returns to producers fall well short of a minimum wage of 500/= per day. In other words, a situation characterized by low productivity and small areas under cultivation imposes a rude subsistence in which the market serves only as a source of scarce cash needed for the most basic necessities. This situation can be overcome through better storage and marketing and access to seasonal credit, which will yield much higher returns to producers.

This transition from hand-to-mouth subsistence to more remunerative, market-driven agriculture will be facilitated through project support for the Masindi Seed and Grain Growers' Association (MSGGA). The Association was established in 1985 by 17 farmers growing improved seed. This seed is sold to the Uganda Seeds Project (USP) which is responsible for quality control and sales. Most of the MSGGA's current income is from sales to the USP. The Association would like to expand from this single primary income source into grain marketing.

The MSGGA currently has some 207 members, most of whom operate medium size farms. The MSGGA is registered as an association with an elected executive committee of ten members; it operates along cooperative lines using sound business principles. The majority of committee members have demonstrated their commitment to the community through the

Rotary Club and other activities In numerous project development meetings, committee members frequently cited MSGGA's strong potential as an economic catalyst for the district. They are of the view that growth of the MSGGA will create a sustained rise in the standard of living of small-holders.

The Association has a good credit reputation with the banking community. It has frequently borrowed significant sums from Barclays Bank and has repaid all loans in full. These loans were used to acquire 22 tractors and related equipment (trailers and implements) for ploughing and transport services for its members. In addition to growing improved seed, members are involved in production and marketing of food grains, oilseeds, and livestock. The principal constraint to expansion for MSGGA is shortage of new capital.

The Association is growing and intends to increase membership to broaden its producer base. MSGGA plans to expand its grain marketing and later diversify into value-added activities, specifically maize milling, oil processing, and the production of animal feeds. MSGGA has initiated the process of World Food Program certification which will enable it to market large volumes directly. The introduction of newly-titled 8-hectare farms will be an opportunity for MSGGA to expand business operations and membership. This coincidence of interests of the MSGGA and the needs of small farmers is a highly opportune starting point for this component of the project. The MSGGA has the greatest immediate potential for stimulating economic growth in targeted sub-counties around the protected area.

The EPED project's primary objective is the elimination of economic needs which now compel people to use the resources of the protected area for survival. This objective can only be attained by a sustained rise in household incomes to levels well above those which now prevail. The EPED project will support the MSGGA to substantially improve grain storage facilities and marketing systems so as to provide small producers with higher returns.

Bringing in small holder members creates substantial burdens for the MSGGA. The current members have on-farm storage and can hold grain for several months with a reasonable moisture content; they have transport to deliver their grain to a central collection point; they can produce significant tonnages of grain, and they can wait for payment. None of this is true for small holders. The increased financial and managerial burdens of working with small holders makes their inclusion possible only if MSGGA receives project assistance. In turn, the MSGGA is willing to take out substantial loans from the Cooperative Bank for crop finance; individual members will provide their farms and property in Masindi as collateral.

Frequent and extensive discussions between the ACIDI proposal team and the MSGGA resolved that the Association will undertake the following:

- 1) Extend membership and services to small-holders in sub-counties around the protected area with an emphasis on resettled households.

- 2) Assist small-holder members to obtain small production credit loans for the purchase of improved seed and ploughing services
- 3) Provide agricultural extension services to members, with an emphasis on small-holders, to increase yields and improve on-farm storage.
- 4) Purchase members' grain in larger volumes at better prices to give producers a much higher price (70/= to 80/= versus 40/= to 50/= per kilo).

The EPED project will provide technical assistance and financial support to MSGGA in support of the above activities. More specifically, this will involve EPED funding for:

- 1) Construction of a central warehouse and a grain cleaning and bagging plant with an initial storage capacity of at least 6,000 tonnes.
- 2) Strengthening management capacity by providing salaries for a general manager, a comptroller-accountant, a field operations manager (agricultural engineer), and one extension worker.
- 3) Short-term technical assistance, to be supplied through the services of VOCA volunteers (4 assignments) and an ACDI consultant (1 assignment), to include:

Elaboration of a multi-year business development plan.

Elaborate a plan for the organizational structure of the MSGGA and develop an approach to effectively incorporate small-holder members.

A grain marketing study to determine optimal strategies for MSGGA.

Management training for the MSGGA professional staff.

An appropriate plan for the MSGGA central grain storage system would be developed by an ACDI consultant.

MSGGA will need a revolving line of credit of up to \$US 200,000 to finance grain purchase and operations. MSGGA has an excellent credit record with Barclays Bank. Discussions with the Co-operative Bank (Uganda), which manages PL-480 funds for crop finance and production credit, have been positive and steps are being taken to establish the most opportune credit arrangements for MSGGA. Individual members have agreed to provide the necessary collateral to support the association's credit load.

The project development team determined that the MSGGA is clearly the most advantageous starting point for this component. However, the COP and district planning team will identify

and draft terms of reference for further feasibility studies needed to attract investment to the district. The project has funds for one feasibility study to be conducted in the second year. This places the district in a position to obtain further support. Masindi District has potential for aquaculture, the production of cotton, palm oil, and essential oils. There is also potential for small-scale hydroelectricity.

7. End of Project Status

Over the 20-month pilot phase, the Environmental Protection and Economic Development (EPED) pilot project will assist with building the District's capacity to manage, monitor, and protect its natural resources by reinforcing the district planning office.

EPED will initiate economic development activities needed to increase income in communities around the protected area. EPED will lay the groundwork for additional support in the post-pilot phase for activities which have proven successful. Progress will be assessed using objective indicators and baseline measures to quantify and qualify achievements for each component.

The first component will strive to establish a locally-supported district planning office which functions to facilitate environmentally-sound economic development. This will be evidenced by:

1. A district financed and professionally staffed planning office.
2. The production of an initial multi-year district development plan.
3. An operational committee system for economic development and environmental planning.
4. A functioning and expanding RC-based environmental monitoring system.
5. An RC-based mechanism for resolving park-people conflicts.
6. Progress towards effective sub-county level planning in buffer zone sub-counties.
7. An initial plan to extend and replicate sub-county planning and environmental monitoring to the wider district.

The second component for buffer zone stabilization will have successfully relocated up to 125 small-holder households. The following criteria will be used to measure success:

1. Land surveys are fully completed.

2. Illicit use of protected areas is reduced
3. Newly established 8-hectare homesteads commence production.
4. Relocated families receive higher prices for crops through membership in the MSGGA

The third component for district economic development will be evaluated on the basis of the following:

1. The MSGGA will have:
 - a five-year business plan,
 - a professional management staff,
 - an increase in membership of at least 125 small-holders,
 - successfully marketed at least one season's grain production, and
 - a good credit and repayment record.
2. Impact on small-holders. It is expected that at least one crop will be marketed through MSGGA at a higher value.

In the post-pilot phase it is anticipated that monitoring will show:

- a rise in real household income,
- a rise in productivity of labor and land from use of new technologies,
- reinvestment in farm development.

This should lead to changes in family welfare, reflected in:

- an increase in children attending school,
- increased expenditure for commodities (bicycles, clothing, sewing machines)
- better health through access to improved nutrition.

8. EPED Implementation Plan (*Illustrative*)

Component I: Strengthening District Planning

Year I: January 1996 - December 1996

- * Jan - Feb Purchase of project equipment; office set-up
- * Mar Chief of Party and Senior District Planner arrive
- * Mar - Apr Local staff hired
- * Mar - Apr Critical path analysis with milestones detailed for each component and overall project completed.
- * Mar COP and Senior District Planner initiate land development, allocation and voluntary relocation component:
 - Senior Planner convenes District Environmental Committee(DEC)
 - Senior Planner chairs District Technical Planning Committee (DTPC) which oversees land allocation and voluntary relocation
- * Apr MIS: set up interactive MIS to include socio-economic and environmental information streams
- * May - Dec On-going collection of data for environmental and socio-economic impact analysis
- * Mar - May Environmental profile of project area conducted by NEIC
- * May - Dec Train RC I - RC III on sub-county environmental monitoring
- * Nov Prepare work plan for Year II
- * Dec Annual report with socio-economic and environmental impact monitoring

Year II January 1997 - August 1997

- * On-going Data collection and analysis for socio-economic and environmental monitoring.
- * Jan - Jun Continue training for RC I - RC III in environmental land use and planning.

- * Aug Final pilot phase report with socio-economic and environmental impact monitoring.

Component II: Voluntary Resettlement

Year I: January 1996 - December 1996

- * Jan - Mar RC-IIIs and District Authorities finalize identification of land for surveys and voluntary relocation.
- * Mar - Apr Senior District Planner assembles implementation team that includes the district engineer and surveyor to prepare a work plan and time tables.
- * May - Jul Survey of land for access road, boreholes, and plots.
- * Jun - Jul Land-use Planner/EIS Expert will prepare environmental impact statement.
- * Jul - Sept Clearing for access road and boreholes.
- * Nov - Dec Voluntary resettlement.

Year II: January 1997 - August 1997

- * Jan - Feb Voluntary resettlement continues.

Component III: Economic Development

Year I: January 1996 - December 1996

- * Mar - Apr MSGGA hires professional staff to be approved by COP.
- * Mar Consultant conducts grain marketing study to determine optimal strategies for MSGGA.
- * Apr Short-term agribusiness consultant assists MSGGA to develop a detailed five-year business plan.
- * May Grain storage study and design of central and on-farm storage systems.
- * Jun Consultant develops plan for incorporating small holder members into MSGGA.
- * Jun - Aug Construct MSGGA central grain storage

* Jul- LOP MSGGA buys, stores and markets grain.

* Apr - LOP MSGGA provides agriculture extension to small-holders.

Years II: January 1997 - August 1997

* Jan- Aug MSGGA assists with on-farm storage for relocated small-holders.

9. Staffing

The EPED project team will be composed of two full-time professionals and a consulting sociologist. The Chief of Party will be recruited regionally; the Senior District Planner will be a Ugandan.

The experience and qualifications sought for the Chief of Party are a Master's degree in environmental studies, economics, or related social sciences. This individual will be a senior professional with an established track record in the environmental field. The COP should be familiar with Ugandan environmental policy. The COP must have demonstrated capability to manage complex environmental programs and be able to design and implement monitoring systems. Experience with economic development projects will be an asset.

The Senior District Planner will have a Master's degree in regional planning, economics, or a related field with a minimum of five years experience.

The planner should be familiar with Uganda Government policies and programs for decentralization and ideally should have experience working at the district level. The planner will have strong computer skills, needed to analyze data and prepare plans and reports.

The Consultant Rural Sociologist will be recruited in Uganda. This individual will hold a master's degree in the social sciences. this position requires experience in applied research and quantitative analysis. The chief role of the consulting sociologist will be to advise on social issues of relocation and to oversee the collection of impact monitoring data. This will require a dynamic individual with excellent communication skills who is sensitive to the household and community issues raised by relocation

The professional team will be supported by short-term consultants provided by ACDI and by Volunteers in Overseas Cooperative Assistance (VOCA). ACDI consultants will develop an MIS system, conduct an EIS, and develop a grain storage plan for MSGGA. VOCA specialists will work with the EPED project to build MSGGA's management capacity in several areas. VOCA volunteers will support the project in business plan development, grain marketing, and organizational development.

ACDI and VOCA will coordinate closely to ensure the timely and effective delivery of the short-term technical assistance. The ACDI team will carry out project development and work with the VOCA Country Director to draft the Scope of Work for each assignment. The VOCA Country Director will submit the Scope of Work to the Washington office which will coordinate the recruiting process. VOCA has regional recruiting offices in the U.S. which are linked to a variety of public and private institutions in the agriculture/natural resources management fields. The recruitment office will select the most appropriate volunteer to carry out the work plan. The Washington-based Regional Desk Officer will provide Uganda-bound volunteers with a comprehensive briefing prior to departure

The National Environmental Information Centre (NEIC) will work closely with the project team to establish a district environmental monitoring system. The NEIC will train sub-county RC's in the collection and preliminary analysis of basic data on: demographics, land and other resource use, livestock populations, and the like. This information will facilitate environmentally sound planing for sub-county activities and provide an on-going information base for the district planning office.

9.1. Terms of Reference

Chief of Party: The COP has overall responsibility for project implementation to assure that the EPED project attains its goals and purposes. He has the pivotal role of providing oversight and guidance on the three project components to keep activities coordinated and on track with the project implementation plan. As the senior member of the project team, he represents the project to USAID, Government of Uganda ministries and departments, and District authorities. The COP reports to the ACDI Vice President for Africa.

The COP will:

1. Establish an operating and effective project office and hire support staff.
2. Develop a detailed project implementation plan.
3. Prepare preliminary scopes of work and a timetable for technical assistance/consultants needed to implement the project's components.
4. In collaboration with the M&E consultant, establish a monitoring and evaluation system which is based on the milestones in the implementation plan.
5. Oversee monitoring and evaluation activities; prepare quarterly and annual progress reports based on M&E data.
6. Oversee project finance, and the preparation of quarterly and annual financial reports. Insure that USAID project finance regulations are followed.
7. Establish clearly defined working groups which are task specific: (1) an environmental group composed of the junior and senior planners, the district environmental officer, the field monitors, and a representative from the game department to cover resettlement, environmental monitoring and management; and (2) an economic development group composed of the planners, MSGGA professional staff and an MSGGA executive board representative to cover the economic development component.
8. Work with MSGGA to assure progress in attaining development goals. Assist MSGGA with technical assistance and other input needed to include small farmers in the association and assure economic growth among the new members.
9. Provide technical assistance and other support to the senior and junior planners.
10. Hold regular meetings with the project team and collaborators to ensure coordination and synergy.

11. Prepare a plan for continuation of activities in the post pilot phase.

Senior District Planner. This person will be responsible for training a permanent district planner, establishing a planning office, implementing a grass-roots based monitoring system, and the production of a district development plan. The senior planner reports to the COP.

The Senior District Planner will:

1. Establish a planning office
2. Train the junior planner to assume all planning functions at the end of the project. This will include the use of monitoring data to track impacts; preparation of annual District reports, land use plans and development plans.
3. Prepare, with assistance from the junior planner, a district land use and development plan.
4. Liaise with the NEIC to determine initial environmental and development indicators to be tracked, and procedures for information sharing and transmittal. Establish an RC-based monitoring system in target sub-counties. Develop a plan for extension of target sub-county planning and monitoring to the wider district in the post-pilot phase.
5. Work with RCs in target sub-counties to develop a grassroots-based system for environmental management and decision making .
6. Have responsibility for field-level oversight of voluntary resettlement on new land areas.
7. Coordinate and oversee district environmental officers's activities, draft and incorporate DEO's work plan into project.
8. Participate in the working groups on the environment and economic development.
9. Meet regularly and coordinate with District authorities on planning issues.

10. Management Information System, Project Monitoring and Evaluation

The management information system used by the EPED project will provide comprehensive financial control and serve to articulate implementation through timely feedback. The EPED MIS will be designed to link expenditure with progress and impact for each component as well as for evaluation of the project as a whole. The project MIS will compile and allow for interrelated analyses of information pertaining to: project finances, economic impacts, and environmental aspects. This will require on-going collection and inputting of data from the following:

Project financial data, which tracks expenditures by component and activity.

Socio-economic data collected by field monitors who will provide regular and timely information on reactions and impacts on beneficiary households.

Routine and regular meetings with the Game Department and UNP to share and analyze data gathered from monitoring and patrols.

Environmental monitoring, using data from village and sub-county RCs trained by the planner in collaboration with the NEIC/NEMA. Monitoring this component will focus on two aspects: the first being the institutional progress of the district planning office in establishing and operationalizing a district environmental and development planning system. The second is progress made in institutionalizing environmental monitoring in the planning process at the grass-roots, sub-county level.

Monitoring the MSGGA, using targets and milestones established in the Association's business development plan.

A short-term consultancy will be used to develop, customize, and train project personnel in the use of appropriate software needed for an interactive and comprehensive MIS database.

11. Budget

ESTIMATED IMPACT ON SMALL HOLDERS

The EPED project must raise small-holder income well above current levels in order to override economic survival incentives for use of resources within the protected area. This annex estimates probable impacts, seen in returns to small-holder maize production, on the basis of 4 general types: traditional 1.00-hectare farms selling at 45/= and 75/= per kilo, and 3- and 5-hectare farms selling at 75/= per kilo.

Calculations used for these estimates are based on the following:

1. Labor per hectare = 122 person-days (World Bank memorandum, 1992).
2. Cost of labor per day: 500/= . (From local interviews; national statistical reports give 600/= per day for agricultural labor).
3. Tractor ploughing services: 61,250/= per hectare (based on local data given as 25,000/= per acre).
4. Ox ploughing services: 29,552/= per hectare (based on local data given as 12,000/= per acre).
5. Improved seed (Longe-I): 13,480/= per hectare (based on local price of 5,500/= per acre from Uganda Seed Project).

Each of the larger three and five-hectare types is reviewed using seven cropping scenarios involving different mixes of labor and technology. The traditional farms also are reviewed using only their own labor and their own seed (OLOS). These are listed below along with an estimate of person-days of labor needed to cultivate and harvest the crop. The total number of person-days per hectare (122) is broken down as follows: clearing = 12; land preparation = 40; planting = 10; weeding = 30; harvesting = 10; and post-harvest = 20).

Scenario (description)	Labor in days.
1T&S (1 Tractor plough and improved seed):	90
2T&S (2 Tractor ploughs and improved seed):	70
1T1O&S (1 Tractor, 1 Ox-plough & improved seed):	70
1O&S (1 Ox plough and improved seed):	90
2O&S (2 Ox ploughs and improved seed):	80
HL+S (Hired labor and improved seed):	122
HLOS (Hired labor and own seed):	122
OLOS (Own labor and own seed):	122

It is realistic to assume that newly-settled farms will cultivate between three to five hectares in the first years, assuming that one-third to one-half of the 8-hectare area is cleared. Tables 1 and 2 highlight the best return to production scenario, 1O&S which gives between 771 and 1,187/= per person day of labor assuming yields between 1.5 and 2.0 tonnes per hectare. The use of tractor or ox-ploughing and improved seed should put yields in this range given that the area has very fertile soils (and new farms will be opening rich virgin land) as well as good rainfall. Ploughing frees household labor and reduces requirements for hired labor which will be needed on these larger (3+ ha.) farms. Interviews with small-holders in the project area indicated that current crop budgets cannot support hiring labor; this obviously confines cropping areas to the capacity of available household supply. Traditional small-holders crop an estimated average area of about 1.75 ha with 1.00 ha or less for crops that are marketed.

A similar analysis of "traditional" small-holder farms is given in Table 3. The use of tractors and hired labor is not possible at this small scale. Ploughing twice, which gives best productivity, is also precluded. Ox-ploughing is not feasible unless the price of maize increases and yields reach the 2 metric tons/ha level. OLOS is the best strategy for small, family-labor based farms, but yields are low (on the order of 1.1 metric ton/ha). Indeed, this is the current situation for most producers in the project area.

The second part of Table 3 estimates the impact of increasing the price from the current 45/= by almost 90 percent to 75/= per kilogram without other interventions. This lifts the daily return to labor into the 500/= to 600/= range which approximates current daily wages paid for agricultural labor in the district. Although very modest in impact, this increase in price alone will put the value of a day's work on one's own land on par with the wage earned from employment on larger commercial farms. However, this alone is not likely to be sufficient to deter people from intruding into the protected area.

Ox-ploughing and sowing improved seed on 3- to 5-hectare farms offers holders significant increases in total income and in the related return to labor. These increases are summarized below (in Uganda Shillings) based on cropping maize two times per year.

Summary Table

Traditional Farm	Net Crop Value	Daily Return to Labor
Baseline(Current):	49,500 to 90,000	232 to 422
Traditional (75/=):	82,500 to 150,000	438 to 796
3-Ha. 1O&S:	337,500 to 562,500	771 to 1,604
5-Ha. 1O&S:	562,500 to 937,500	771 to 1,604

The above table is based on yields of 1.5 and 2.0 t./ha. It is not sensitive to the mix of household and hired labor on 3- and 5-hectare farms for which the latter will require more; but it does show a daily labor budget which is well above the 500 to 600/= cost of hired day labor. It also indicates net income from maize which is several times more than the current 100,000/= per year reported by local small-holders and confirmed in the above table. The minimum improved scenario of 3 hectares at 1.5 t./ha raises net household income before

paying labor roughly four-fold. This improvement alone represents a substantial rise in income and an elimination of the economic rationale of survival and necessity for intrusions into the protected area. It is highly likely that this economic improvement will be quickly manifested in, among other things, the payment of school fees, increased investment in livestock, and the purchase of bicycles.

The central objective of extension services for small-holders will be establishing the optimal mix of technology and labor and assessments of credit requirements needed to give farm households the best returns at these new and increased scales of production.

Agricultural Cooperative Development International Environmental Planning and Economic Development: Masindi Buffer Zone Project							
12/15/95	U.S. Gov't Funded YEAR I	Non- U.S. Gov't Funded YEAR 1		U.S. Gov't Funded YEAR II	Non- U.S. Gov't Funded YEAR II	U.S. Gov't Funded TOTAL	Non- U.S. Gov't Funded TOTAL
SUMMARY BY LINE ITEM							
1. SALARIES AND WAGES	\$112,500	\$5,720		\$55,440	\$5,471	\$167,940	\$11,191
2. PAYROLL ADDED COSTS	16,455	1,430		9,030	3,411	\$25,485	\$4,841
3. ALLOWANCES	19,385	4,800		6,300	2,520	\$25,685	\$7,320
4. TRAVEL, TRANSPORT & PER DIEM	27,686	0		22,893	0	\$50,579	\$0
5. CONSULTANTS	27,331	0		19,720	0	\$47,051	\$0
6. COMMODITIES	266,240	284,500		0	184,500	\$266,240	\$469,000
7 OTHER DIRECT COSTS	112,422	58,400		23,216	3,150	\$135,638	\$61,550
9 ACDI & DISTRICT TOTAL DIRECT COSTS	582,019	354,850		136,598	199,051	\$718,617	\$553,901
10. ACDI INDIRECT COSTS	213,019	0		49,995	0	\$263,014	\$0
11. ACDI & DISTRICT TOTAL DIRECT & INDIRECT COSTS	795,038	354,850		186,593	199,051	\$981,631	\$553,901
12. SUBCONTRACTS	18,592	0		6,200	0	\$24,792	\$0
13. GRAND TOTAL	813,630	354,850		192,793	199,051	\$1,006,423	\$553,901

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Agricultural Cooperative Development International Environmental Planning and Economic Development: Masindi Buffer Zone Project				U.S. Gov't Funded YEAR I	Non- U.S. Gov't Funded YEAR 1	U.S. Gov't Funded YEAR II	Non- U.S. Gov't Funded YEAR II	U.S. Gov't Funded TOTAL	Non- U.S. Gov't Funded TOTAL
12/15/95									
COMPONENT ONE:									
District Strengthening/Planning/Project Management									
1. SALARIES AND WAGES									
				\$93,300	\$5,320	\$48,983	\$2,793	\$142,283	\$8,113
			PM						
Project Manager/COP	\$50,000	12	12	50,000	0	6	26,250	0	76,250
post differential @ 25% of Salary	\$12,500	12	12	12,500	0	6	6,563	0	19,063
Senior District Planner	\$14,000	12	12	14,000	0	6	7,350	0	21,350
Junior District Planner	\$2,000	12	12	0	2,000	6	0	1,050	0
Environmental Officer	\$2,000	12	12	0	2,000	6	0	1,050	0
Accountant	\$4,200	12	12	4,200	0	6	2,205	0	6,405
Administrative Assistant	\$3,600	12	12	3,600	0	6	1,890	0	5,490
Secretary	\$3,000	12	12	3,000	0	6	1,575	0	4,575
Drivers (2)	\$660	24	24	0	1,320	12	0	693	0
Field Monitors/Data Collectors (2)	\$3,000	24	24	6,000	0	12	3,150	0	9,150
			Days			Days			
HQ SHORT TERM TECHNICAL ASSISTANCE/SUPPORT									
Sandra Blanchard	\$208 12 per day	10	10	2,081	0	5	1,093	0	3,174
2 PAYROLL ADDED COSTS									
Project Manager/COP				3,161			2,753		
Life Insurance @ 1 58% of salaries				790	0		415	0	1,205
Long Term Disability @ 0 57% of salaries				287	0		150	0	437
Health Insurance @ \$162 per month				1,944	0		2,041	0	3,985
MEDEX @ \$140 per year for 1 family				140	0		147	0	287
LOCAL STAFF BENEFITS									
25% of salaries				\$7,700	\$1,330		\$4,245	\$733	\$11,743
HQ STTA Holidays, Leave, Benefits									
ACDI @ 38 18% of salary				\$795	0		\$417	0	1,212

Agricultural Cooperative Development International Environmental Planning and Economic Development Masindi Buffer Zone Project				U.S. Gov't Funded YEAR I	Non- U.S. Gov't Funded YEAR I	U.S. Gov't Funded YEAR II	Non- U.S. Gov't Funded YEAR II	U.S. Gov't Funded TOTAL	Non- U.S. Gov't Funded TOTAL
12/15/95									
3 ALLOWANCES				\$19,385	\$4,800	\$6,300	\$2,520	\$17,025	\$0
Temporary Quarters Allowance	30 days								
1st Occupant @	\$79 50			2,385	0		0	2,385	0
Living Quarters Allowance	1 family	Mos							
Project Manager									
Residential Quarters @	\$400 per month	12		4,800	0	6	2,520	7,320	0
Utilities @	\$200 per month	12		2,400	0	6	1,260	3,660	0
Guard Service	\$200 per month	12		2,400	0	6	1,260	3,660	0
Furniture Allowance	\$5,000			5,000					
Senior District planner					0	6	0	0	0
Residential Quarters @	\$400 per month	12			4,800		2,520		
Utilities @	\$200 per month	12		2,400		6	1,260		
Junior District planner									
Housing/Utilities	\$200 per month	12			2,400	6	1,260		
4 TRAVEL, TRANSPORT & PER DIEM				\$27,686	\$0	\$22,893	\$0	\$45,893	\$0
A ACIDI TRAVEL				\$11,280	0	\$11,214	0	22,494	0
COP and 3 dependents	@ \$570 per person	Trips	4	\$2,280		4	2,394	4,674	0
(to and from post)									
ACDI HQ									
Kampala - Masindi (Regional Representative)									
2 RT/yr @	\$200		2	400	0	1	210	610	0
Short-term TA Travel - U S - Kampala									
U S - Kampala @	3,600 per RT		2	7,200	0	2	7,560	14,760	0
Miscellaneous travel costs	\$300 /int'l trip		2	600	0	2	630	1,230	0
(taxis to/from airport, visas, inoculations, airport taxes, and other incidental travel expenses)									
Local TA for Sociologist at			4	800		2	420	1,220	0
\$200 per trip									
B ACIDI PER DIEM				\$13,406	0	\$8,529	0	21,935	0
Project Manager/COP & Senior Planner		Days	24	4,656	0	12	2,444	7,100	0
Kampala (1 day per month each)	194 per day								
HQ Trips (Regional Representative)									
Masindi	\$45 per day		10	450	0	5	236	686	0
Short-term TA Trips/Expatriate									
Kampala	\$194 per day		10	1,940	0	10	2,037	3,977	0
Masindi	\$45 per day		50	2,250	0	50	2,363	4,613	0
Short-term TA Trips/Local									
EIS Consultants - Masindi	\$45 per day		30	1,350	0	0	0	1,350	0
Sociologist - Masindi	\$45 per day		40	1,800		20	945	2,745	0
Drivers' Per Diem and Allowance	\$80 per month		12	960		6	504	1,464	0
C ACIDI FREIGHT SHIPMENT									
1,500 Kilograms @	\$2 per Kilo	Trips	1	3,000		1	3,150	6,150	0

Agricultural Cooperative Development International Environmental Planning and Economic Development: Masindi Buffer Zone Project				U.S. Gov't Funded YEAR I	Non- U.S. Gov't Funded YEAR 1	U.S. Gov't Funded YEAR II	Non- U.S. Gov't Funded YEAR II	U.S. Gov't Funded TOTAL	Non- U.S. Gov't Funded TOTAL
12/15/95									
5. CONSULTANTS				\$27,331	\$0	\$19,720	\$0	\$47,051	\$0
ACDI -		Days				Days			
Consulting fees - Expatriate	\$300 avg daily rate	60	18,000	0	60	18,900	0	36,900	0
Workers' Compensation @	4 0%		720	0		756	0	1,476	0
Medical Evacuation @	\$30 50 per pm	2	61	0	2	64	0	125	0
Environmental Impact Study - Local									
Consulting Fees	\$90 00 per day	35	3,150	0	0	0	0	3,150	0
Sociologist - Local	\$90 00 per day	60	5,400	0	40	3,780	0	9,180	0
6 COMMODITIES				\$104,300	\$0	\$0	\$0	\$104,300	\$0
1 Vehicles 4x4 jeep-type	30,000 each		30,000	0		0	0	30,000	0
1 1/2 ton pick-up truck	26,000		26,000	0		0	0	26,000	0
(vehicle quotes include shipping)									
2 Motorcycles	2,500 each		5,000	0		0	0	5,000	0
1 Set Household Appliances	2,400 each		2,400	0		0	0	2,400	0
1 Fax/telecopier	700		700	0		0	0	700	0
2 desktop computers w/ modem	2,500 each		5,000	0		0	0	5,000	0
1 Lap-top computer	2,000 each		2,000	0		0	0	2,000	0
2 Telephones	100 each		200	0		0	0	200	0
1 laser printer	1,000 each		1,000	0		0	0	1,000	0
1 dot matrix printer	700 each		700	0		0	0	700	0
3 packages of software @	1,000		3,000	0		0	0	3,000	0
1 photocopier	5,000		5,000	0		0	0	5,000	0
Office Furniture	3,300		3,300	0		0	0	3,300	0
1 3 3 KV Generator @	4,000 each		4,000	0		0	0	4,000	0
1 8 6 KV Generator @	5,500 each		5,500	0		0	0	5,500	0
3 Voltage Regulators/Stabilizers	150 each		450	0		0	0	450	0
2 UPS/900 @	1,000		2,000	0		0	0	2,000	0
Shipping @ 20 %	for other commodities		8,050	0		0	0	8,050	0

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Agricultural Cooperative Development International Environmental Planning and Economic Development Masindi Buffer Zone Project			U.S. Gov't Funded YEAR I	Non- U.S. Gov't Funded YEAR I	U.S. Gov't Funded YEAR II	Non- U.S. Gov't Funded YEAR II	U.S. Gov't Funded TOTAL	Non- U.S. Gov't Funded TOTAL	
12/15/95									
7. OTHER DIRECT COSTS			\$50,460	\$6,000	\$23,216	\$3,150	\$73,676	\$9,150	
Office Rental per year	500 per month	12		6,000	6	0	3,150	0	
Winning/security for Office and Housing			6,000	0		0	6,000	0	
Communications	800 per month	12	9,600	0	6	5,040	14,640	0	
Office supplies	200 per month	12	2,400	0	6	1,260	3,660	0	
Fuel/insurance/maintenance									
Vehicle	9,600 per year		9,600	0		5,040	14,640	0	
Truck	9,600 per year		9,600	0		5,040	14,640	0	
Motorcycle	2,700 per year		2,700	0		1,418	4,118	0	
ACDI HEADQUARTERS COSTS			4,780			2,709			
Physical Exams-LT advisor + dependent)	300	1	300	0		0	300	0	
Physical Exams -ST consultants	100	2	200	0	1	105	305	0	
Umbrella Liability @	160 per year		160	0		168	328	0	
Project Bond @	100 per year		100	0		105	205	0	
Excess Auto/Foreign Liabil	200 per year		200	0		210	410	0	
Travel Accident	50 per year		50	0		53	103	0	
Lloyds Special Insurance	170 per year		170	0		179	349	0	
DHL - Courier	150 per month	12	1,800	0	6	945	2,745	0	
General misc costs such as copies, temp services, subscriptions, books, etc @	150 per month	12	1,800	0	6	945	2,745	0	
Advisory Board @	500 per meeting	Meetings 2	1,000		Meetings 1	525			
SUBTOTAL COMPONENT ONE:			\$334,117	\$17,450		\$128,526	\$9,196	\$462,643	\$26,646

Agricultural Cooperative Development International Environmental Planning and Economic Development: Masindi Buffer Zone Project				U.S. Gov't Funded YEAR I	Non- U.S. Gov't Funded YEAR 1	U.S. Gov't Funded YEAR II	Non- U.S. Gov't Funded YEAR II	U.S. Gov't Funded TOTAL	Non- U.S. Gov't Funded TOTAL	
12/15/95										
COMPONENT TWO:										
Land Development, Surveys and Titling										
1. SALARIES AND WAGES					\$1,800	\$400	\$0	\$0	\$1,800	\$400
				Months						
LOCAL UGANDAN STAFF										
District Engineer @ 100 per month				2	0	200	0	0	200	
District Surveyor @ 100 per month				2	0	200	0	0	200	
Quantity Control Accountant @ \$300 per month				6	1,800	0	0	1,800	0	
2 PAYROLL-ADDED COSTS					\$450	\$100	\$0	\$0	\$450	\$100
LOCAL STAFF BENEFITS @ 25% of salary					450	100	0	0	450	100
3. COMMODITIES AND EQUIPMENT					\$35,200	\$100,000	\$0	\$0	\$35,200	\$100,000
Boreholes/shallow wells @ \$4,400 each				8	35,200	0	0	35,200	0	
Spares and repairs for boreholes @ 15%					5,280		0	5,280	0	
1,000 hectares land valued @ 100 /ha						100,000	0	0	100,000	
4. OTHER DIRECT COSTS					\$61,962	\$52,400	\$0	\$0	\$61,962	\$52,400
UGANDA COSTS										
Equipment Rental for Roads				Days						
6 8-ton trucks @ 260 per day				20	0	31,200	0	0	31,200	
2 Graders @ 172 per day				20	0	6,880	0	0	6,880	
2 Bulldozers @ 172 per day				20	0	6,880	0	0	6,880	
2 Compactors @ 186 per day				20	0	7,440	0	0	7,440	

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Agricultural Cooperative Development International Environmental Planning and Economic Development: Masindi Buffer Zone Project				U.S. Gov't Funded YEAR I	Non- U.S. Gov't Funded YEAR I	U.S. Gov't Funded YEAR II	Non- U.S. Gov't Funded YEAR II	U.S. Gov't Funded TOTAL	Non- U.S. Gov't Funded TOTAL
12/15/95									
a) Surveying 1,000 hectares for Parcels , access roads and bore holes	\$15 per hectare			15,000	0	0	0	15,000	0
b) Clearing bush @ 300 hectares	\$50 per hectare			15,000	0	0	0	15,000	0
Access road									
Equipment Fuel -1,000 liters @	\$0 95 /liter per day	Days 20		23,142	0	0	0	23,142	0
Equipment Operator Salaries 12 Operators x	\$5 50 per day	20		1,320	0	0	0	1,320	0
Cement, materials, culverts 15 km @	\$500 per km			7,500	0		0	7,500	0
SUBTOTAL COMPONENT TWO				\$99,412	\$152,900	\$0	\$0	\$99,412	\$152,900
COMPONENT THREE: Economic Development									
1. SALARIES AND WAGES				\$17,400	\$0	\$6,458	\$2,678	\$23,858	\$2,678
LOCAL UGANDAN STAFF									
General Manager (MSGGA)	\$5,400 / yr	12		5,400	0	3	1,418	6,818	1,418
Operations Manager (MSGGA)	\$4,800 / yr	12		4,800	0	3	1,260	6,060	1,260
Financial Comptroller (MSGGA)	\$4,200 / yr	12		4,200	0	6	2,205	6,405	0
Extension/Field Staff (MSGGA)	\$3,000 / yr	12		3,000	0	6	1,575	4,575	0
2. PAYROLL ADDED COSTS				\$4,350	\$0	\$1,614	\$2,678	\$5,964	\$2,678
LOCAL STAFF BENEFITS									
@ 25% of salary				4,350	0	1,614	2,678	5,964	2,678

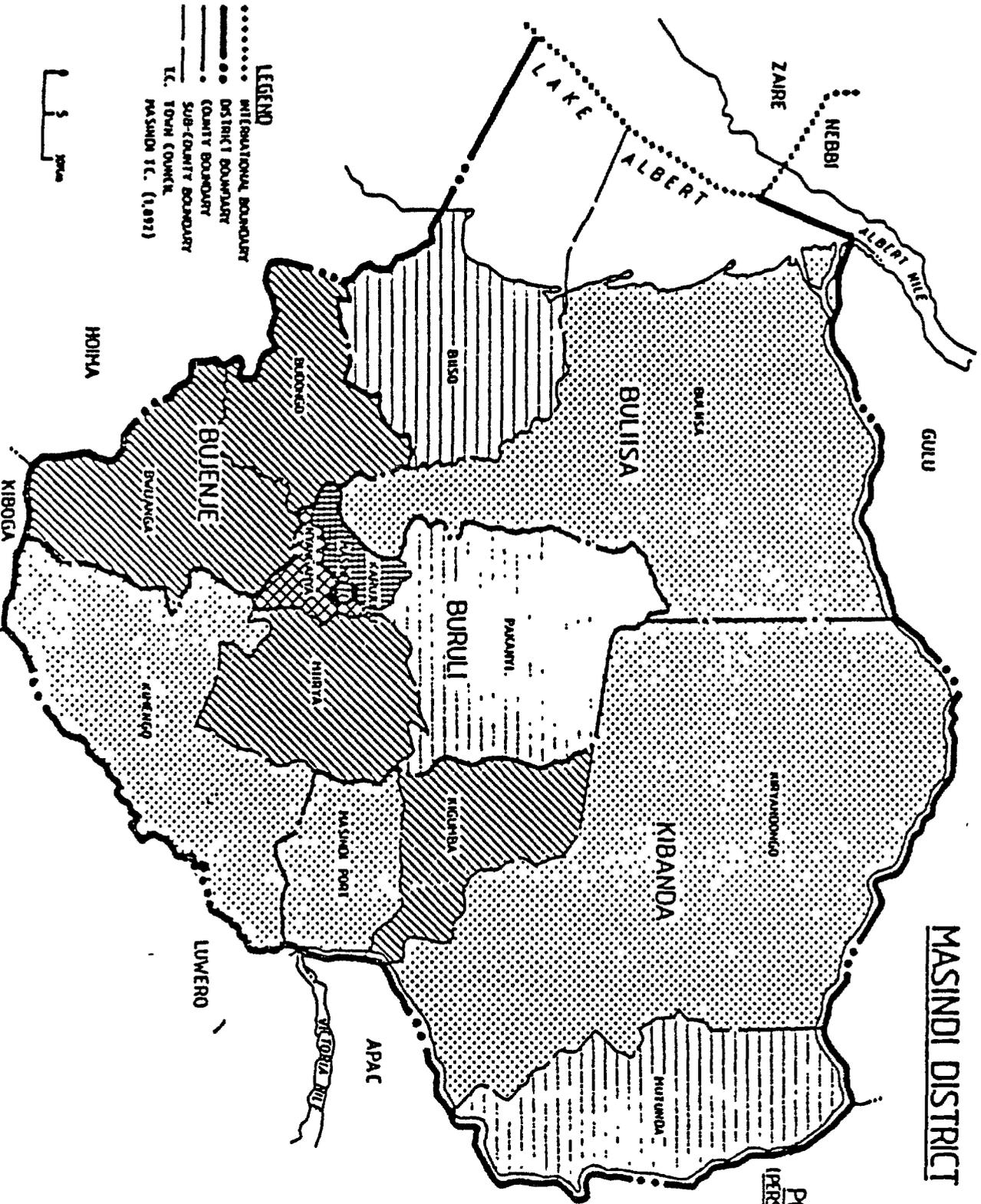
Agricultural Cooperative Development International Environmental Planning and Economic Development: Masindi Buffer Zone Project				U.S. Gov't Funded YEAR I	Non- U.S. Gov't Funded YEAR I	U.S. Gov't Funded YEAR II	Non- U.S. Gov't Funded YEAR II	U.S. Gov't Funded TOTAL	Non- U.S. Gov't Funded TOTAL
12/15/95									
3. COMMODITIES AND EQUIPMENT				\$126,740	\$184,500	\$0	\$0	\$126,740	\$369,000
Central Grain Storage									
	1 Warehouse	\$45,000 ea		45,000	0		0	45,000	0
	Cleaning, bagging, quality control			40,000	0		0	40,000	0
	1 Equipment Shed	\$15,000		15,000	0		0	15,000	0
	8 6 KWW Generator			5,500	0		0	5,500	0
On-farm Storage									
	100 units @	\$150 each	in Year I	15,000				15,000	0
	1 motorcycle for extension workers	\$2,500 ea		2,500	0		0	2,500	0
	1 laptop computer @	\$2,000 ea		2,000	0		0	2,000	0
	1 dot matrix printer @	\$700 ea		700	0		0	700	0
	Shipping @ 20% for commodities			1,040				1,040	0
Crop Finance									
	credit				150,000		150,000	0	300,000
	interest @	23%			34,500		34,500	0	69,000
SUBTOTAL COMPONENT THREE				\$148,490	\$184,500	\$8,072	\$189,855	\$156,562	\$374,355
ACDI AND DISTRICT TOTAL DIRECT COSTS				\$582,019	\$354,850	\$136,598	\$199,051	\$718,617	\$553,901
COMPONENT ONE				334,117	17,450	128,526	9,196	462,643	26,646
COMPONENT TWO				99,412	152,900	0	0	99,412	152,900
COMPONENT THREE				148,490	184,500	8,072	189,855	156,562	374,355
ACDI INDIRECT COSTS									
	ACDI	36 6% of total direct costs		\$213,019		\$49,995		\$263,014	\$0
ACDI TOTAL DIRECT & INDIRECT COSTS				\$795,038	\$354,850	\$186,593	\$199,051	\$981,631	\$553,901
SUBCONTRACT - NEIC				\$18,592	0	\$6,200	0	\$24,792	\$0
GRAND TOTAL				\$813,630	\$354,850	\$192,793	\$199,051	\$1,006,423	\$553,901

Agricultural Cooperative Development International Environmental Planning and Economic Development Masindi Buffer Zone Project				U.S. Gov't Funded YEAR I	Non- U.S. Gov't Funded YEAR I	U.S. Gov't Funded YEAR II	Non- U.S. Gov't Funded YEAR II	U.S. Gov't Funded TOTAL	Non- U.S. Gov't Funded TOTAL
12/15/95									
3. COMMODITIES AND EQUIPMENT				\$126,740	\$184,500	\$0	\$184,500	\$126,740	\$369,000
Central Grain Storage									
	1 Warehouse	\$45,000 ea		45,000	0		0	45,000	0
	Cleaning, bagging, quality control			40,000	0		0	40,000	0
	1 Equipment Shed	\$15,000		15,000	0		0	15,000	0
	8 6 KVV Generator			5,500	0		0	5,500	0
On-farm Storage									
	100 units @	\$150 each	in Year I	15,000				15,000	0
	1 motorcycle for extension workers	\$2,500 ea		2,500	0		0	2,500	0
	1 laptop computer @	\$2,000 ea		2,000	0		0	2,000	0
	1 dot matrix printer @	\$700 ea		700	0		0	700	0
	Shipping @ 20% for commodities			1,040				1,040	0
Crop Finance									
	credit				150,000		150,000	0	300,000
	interest @	23%			34,500		34,500	0	69,000
SUBTOTAL COMPONENT THREE				\$148,490	\$184,500	\$8,072	\$189,855	\$156,562	\$374,355
ACDI AND DISTRICT TOTAL DIRECT COSTS				\$582,019	\$354,850	\$136,598	\$199,051	\$718,617	\$553,901
COMPONENT ONE				334,117	17,450	128,526	9,196	462,643	26,646
COMPONENT TWO				99,412	152,900	0	0	99,412	152,900
COMPONENT THREE				148,490	184,500	8,072	189,855	156,562	374,355
ACDI INDIRECT COSTS									
	ACDI	36 6% of total direct costs		\$213,019		\$49,995		\$263,014	\$0
ACDI TOTAL DIRECT & INDIRECT COSTS				\$795,038	\$354,850	\$186,593	\$199,051	\$981,631	\$553,901
SUBCONTRACT - NEIC				\$18,592	0	\$6,200	0	\$24,792	\$0
GRAND TOTAL				\$813,630	\$354,850	\$192,793	\$199,051	\$1,006,423	\$553,901

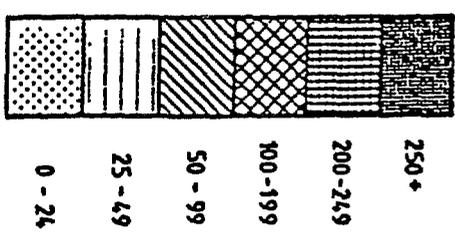
ANNEX A - 3

MAPS

MASINDI DISTRICT



POPULATION DENSITY
(PERSONS PER SQUARE LAND AREA)

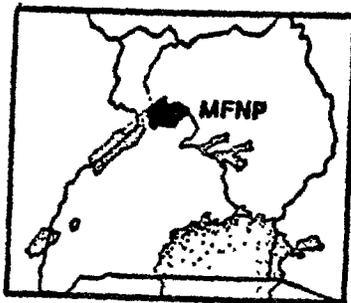
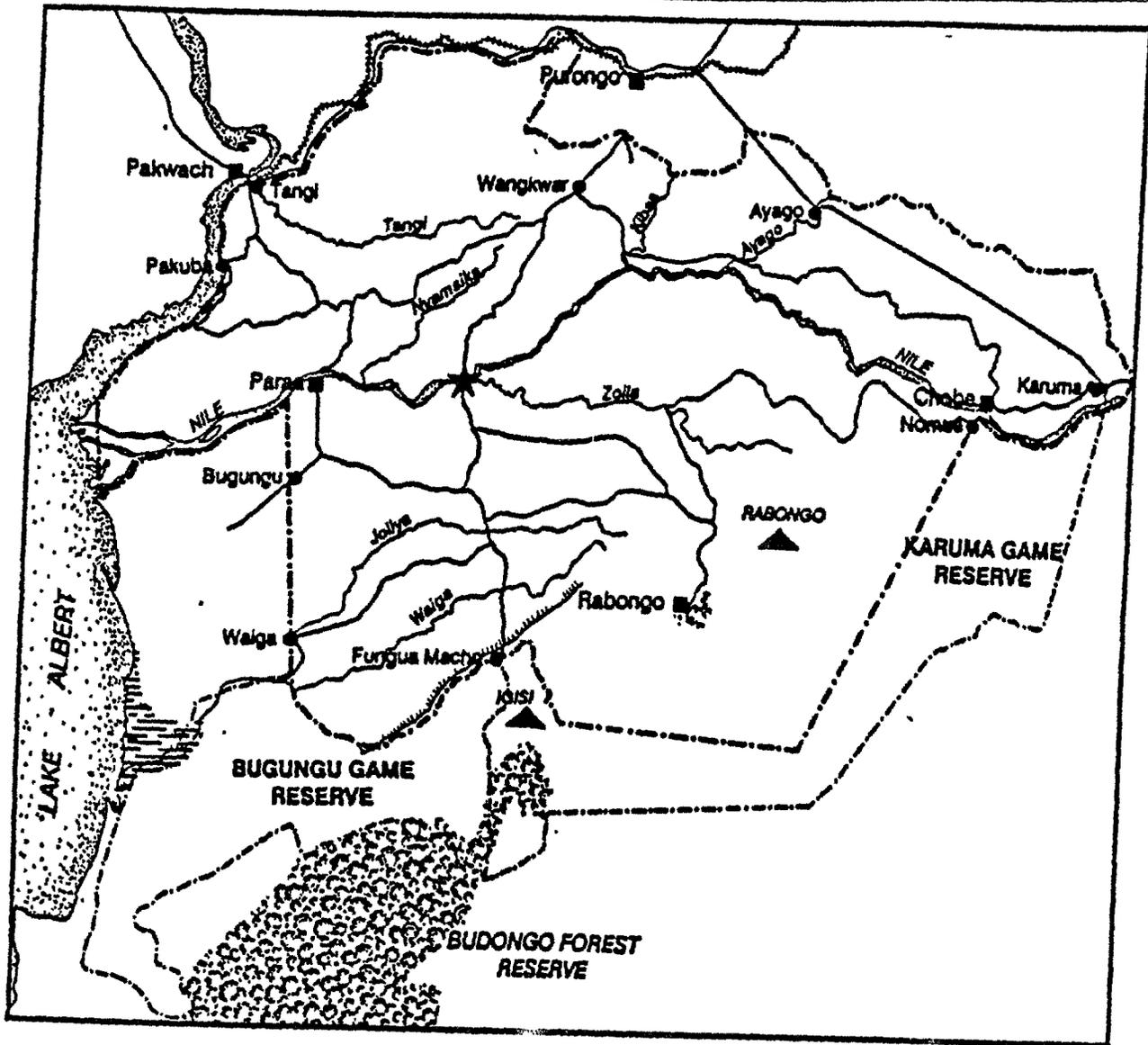


LEGEND

- INTERNATIONAL BOUNDARY
- DISTRICT BOUNDARY
- COUNTY BOUNDARY
- SUB-COUNTY BOUNDARY
- T.C. TOWN (OWNER MASINDI T.C. (1987))



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KEY			
	Park boundary		Hill
	Game Reserve boundary		Major station
	Road		Minor station
	Railway		Falls
	River		Forest
	Escarpment		