AFRICARE/UGANDA
UGANDA FOOD SECURITY INITIATIVE

PHASE 2

FINAL EVALUATION REPORT

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Table of Acronyms

ACDI/VOCA	Agricultural Cooperative Development International/Volunteers for Overseas Cooperative Assistance
ACDI/ AER	Annual Estimate of Requirements
AFRENA	Agro forestry Research Network for Africa
AHI	African Highlands Initiative
ARD-COBS	Associates in Rural Development-Conserve Bio-diversity for Sustainable Development
ARDC	Agricultural Research Development Center
BMI	Body Mass Index
BYG	Backyard Garden
CARE	Cooperative Assistance for Relief Everywhere
CBO	Community Based Organization
CFSC	Community Food Security Calendar
CIAT	International Center for Tropical Agriculture
CIP	International Potato Center
CIMCI	Community -based Integrated Management of Childhood Illnesses
CR	Country Representative
CS	Cooperating Sponsor
CSP	Country Strategic Plan
DAP	Development Activity Proposal
DDHS	District Directorate for Health Services
DDP	District Development Plan
DIP	Development Implementation Plan
FAO	Food And Agricultural Organization
FFP	Food For Peace
FFP/W	Food For Peace/Washington
FFS	Farmer Field School
FSCCI	Food Security Community Capacity Index
FORRI	Forestry Resources Research Institute
FSC	Food Security Committee
FORI	Forestry Research Institute
FY	Fiscal Year
GDP	Growth Domestic Product
GM	Growth Monitoring
GMP	Growth Monitoring and Promotion
GOU	Government of Uganda
GP	Growth Promoter
Ha	Hectare
HIV/AIDS	Human Immune Virus/Acquired Immune Deficiency Syndrome
HH	Household
HPI	Heifer Project International
HRW	Hard Red Winter Wheat
IEC	Information, Education and Communication
IFAD	International Fund for Agricultural Development
KDA	Kabale District Administration
KDPAN	Kabale District Plan of Action for Nutrition
KPSPC	Kabale District Private Sector Promotion Center

Kg	Kilogram
Km	Kilometer
LC	Local Council
LOA	Life of Activity
LGDP	Local Government Development Plan
M& E	Monitoring and Evaluation
MAAIF	Ministry of Agriculture, Animal Industries and Fisheries
MBIFCT	Mgahinga and Bwindi Impenetrable Forest Conservation Trust
MFPED	Ministry of Finance, Planning and Economic Development
MOH	Ministry of Health
MOST	Micronutrient Operational Strategy and Technologies
MOU	Memorandum of Understanding
MT	Metric Ton
MTE	Mid-Term Evaluation
MUK	Makerere University, Kampala
NAADS	National Agricultural Advisory Services
NARO	National Agricultural Research Organization
NEMA	National Environment Management Authority
NGO	Non-Governmental Organization
NRM	Natural Resources Management
OSP	Orange Sweet Potatoes
PEAP	Poverty Eradication Action Plan
PMA	Plan for Modernization of Agriculture
PL 480	Public Law 480 (for United States of America)
PM	Program Manager
PRA	Participatory Rural Appraisal
PVO	Private Voluntary Organization
SW	Southwest
SO	Strategic Objective
Title II	Section of U.S. Public Law (P.L) 480, under which agricultural commodities are provided through Non-Governmental Organizations to foreign countries for development and emergency activities
UBOS	Uganda Bureau of Statistics
UFSI	Uganda Food Security Initiative
UDHS	Uganda Demographic and Health Survey
UNSPPA	Uganda National Seed Potato Producers Association
UNFA	Uganda National Farmers Association
UNHS	Uganda National Household Survey
USAID	United States Agency for International Development
VAP	Village Action Plan
VNC	Village Nutrition Centres
VF	Volunteer Farmer
VOCA	Volunteers for Overseas Cooperative Assistance
%	Percentage
$	United States Dollar

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EXECUTIVE SUMMARY

SUMMARY ASSESSMENT OF THE PROJECT

The Uganda Food Security Initiative (UFSI) is a remarkable project. It tackles the complex problem of food insecurity in an impoverished rural area with few roads, where people rely on smallholder subsistence agriculture, where population density is especially high, and the terrain is rugged and steep. The area is ecologically fragile with considerable soil erosion from landslides, and where arable land is shrinking rapidly. Poverty in this area is extreme, farms are usually less than one hectare, and barely provide for subsistence. Because of a lack of improved seeds, yields are low, and food shortages common. With no roads, any small food surplus is at the mercy of the few middlemen who make it to the villages by footpath, offering prices well below those of nearby markets.

The rate of preventable diseases in children has been particularly high in this region, and malnutrition common due to the protein-poor diet. As one independent analyst wrote: "This was a region where extreme poverty and environmental deterioration were endemic. It seemed that if sustainable development can be made to work here, it can work almost anywhere.[1]" And this region, as both the medium-term and this final evaluation documents, was where the UFSI project has shown such remarkable success.

FINAL EVALUATION

A final evaluation team visited Uganda from January 9 to 26, 2006 to undertake an independent and comprehensive review of the achievements of UFSI-II with respect to the original goals, objectives, and targets identified in the original project (DAP), and the results specified in the Detailed Implementation and Monitoring and Evaluation Plan (DIP) of July 31, 2002. The team consisted of Katrine Anderson, Team Leader, Richard Basalirwa, Nutrition Specialist, Hans Mwesigwa, Roads Engineer, John Okorio, Natural Resource Management Specialist, and Dick Sserunkuma, Agricultural Economist. The team benefited from the participation in the field of David Mutazindwa, USAID PMS/Food Security Specialist. This report evaluates how well the project activities have been executed, assesses the adequacy of measures taken to ensure sustainability of the project activities, and makes recommendations on implementing the remainder of the project and on subsequent project activities of Africare.

PROJECT BACKGROUND

The Uganda Food Security Initiative Project – phase two (UFSI-II) is a four and three-quarter years (57 month) USAID-funded Title II development activity program, implemented by Africare Uganda. The project was initiated in January 2002 and is scheduled for completion on September 30, 2006. The project has built on the success of phase one (UFSI-I) and has continued to pursue the goal of improving household food security in Uganda, particularly in the south-western part of the country where rural poverty and malnutrition are especially severe. The project seeks to increase the quantity of food produced and reduce post-harvest losses, improve farm family access to food by raising family income, and enhance the quality of food consumed at home. An estimated 21,252 households (around 150,000 people) in 144 villages in the districts of Kabale, Kisoro, Ntungamo, Kanungu, and Rukungiri were targeted.

STRENGTHS OF THE PROJECT

1. The Participatory Approach. The participatory approach of the project has been instrumental to its success. From the outset, farmers have been involved in problem identification, action planning, and developing their Village Action Plans (VAPs). They decide the problems, nature of intervention, desired change, activities to be conducted, the responsible party, and the time frame within which to attain the

[1]Stevens, 2002, page 148.

desired changes. The election by villagers of a Food Security Committee (FSC) to coordinate the activities of the VAP and handle relations with external partners has been equally important.

Developing the VAPs takes time and resources, but they have been a crucial tool in promoting community participation in the project. The evaluation team was impressed by how involved the beneficiaries were in developing and implementing these plans, which have also proven to be a useful tool in developing leadership skills, and especially in the empowerment of women. Building on skills acquired in developing the VAPs, many women have subsequently campaigned and been elected to leadership positions in the local administration.

This participatory approach has also been very important in developing cohesive and dynamic groups. As in UFSI-I, the second phase has implemented its activities by developing the capacity of farmer groups and partner sub-county governments to plan, budget, implement, and evaluate food security activities. This process is time-consuming, and it is to the credit of the project's management and staff that it has been done so well. The cohesion and drive of groups visited by the evaluation team, especially those groups established in the early years of UFSI-II, were most apparent and will be crucial to sustaining the project's activities.

2. The Partnership Approach. A key feature of the UFSI approach has been the extensive collaborative arrangements between farmers, project staff and a wide variety of partners. Through a collective effort rather than working alone, Africare has been able to draw on the technical expertise of an impressive range of partners. This benefits not only the farmers, but also the partner agencies that have been able to field-test and disseminate their technologies. It also benefits the project, in that expertise and technologies have been drawn upon and integrated into the project with minimal direct cost. This is a win-win situation for all. Many project activities have been executed through formally negotiated partnerships, while others have been less formal. This ability to utilise partnerships and the resultant synergies to achieve project objectives has contributed in an important way to the project's success. It will also be very important to sustaining the project's activities.

3. Project Design. The design of the project was extremely well conceived. Food security is a multi-sectoral concept and requires a multi-sectoral approach. The project's components mutually reinforce each other and create a synergy that gives the project cohesion and dynamism. Road construction opens up new areas to markets, agricultural activity and productivity is increased by introducing new species and technologies, post-harvest losses are reduced by improved storage facilities, soil erosion control and conservation measures improve soil fertility and hence land productivity, and nutrition interventions promote a better utilization of food, more healthy communities and hence a less food insecure population.

PROJECT ADMINISTRATION.

The project's strong and positive impact is due in no small part to its dedicated staff. The final evaluation of UFSI-I noted that the project was extremely well managed. Partners and staff appreciated the project's transparency and accountability. This good performance continued during the initial implementation of the second phase of the project, but by the time of the Mid-Term Evaluation (MTE), there was deterioration in project administration reflecting staffing and remuneration issues. As a result, staff turnover had been high.

The final evaluation (FE) team has been impressed by the speedy response of management to this situation. The post of Program Coordinator (PC) was filled quickly, and equally impressive has been the filling of vacant posts by well-qualified staff. New section heads have been recruited to the roads, nutrition, agriculture and NRM sections. In addition, as recommended in the MTE, a new position of marketing specialist was created and filled. Positions remaining unfilled are the M&E assistant, one agricultural extension agent (EA), one nutrition EA, and three NRM EAs. The NRM positions were not filled due to the closing of SUNAREM funding. An intern is presently working with the project for one

year assisting the M&E activities and making recommendations concerning the M&E activities in the new MYAP.

In addition, to address the remuneration issue, the FE team was pleased to note that there had been a review of other NGO packages, and an across the board increase in salaries of 35% was approved in July 2005. The establishment of a salary scale for all positions to improve transparency, however, has not yet been done. *It is recommended that in future activities, project management review salary scales to ensure harmony within the project team, and also to provide a solid salary scale base.*

[redacted]

those who need it.

AGRICULTURAL PRODUCTION, POST-HARVEST HANDLING AND MARKETING

Objectives and activities: The objective of the agricultural component of UFSI-II was to increase agricultural production and productivity through increased volume, quality and variety of foods produced and made available for household food consumption and sale, as well as to improve post-harvest handling/storage, value-added processing and marketing. Since findings at the end of UFSI-I showed only modest achievements in marketing, the training of farmers in marketing was given more emphasis under UFSI-II.

The main interventions were:

- Introduction and dissemination of improved inputs and technologies for food and cash crop production for crops such as *Solanum* potatoes, sweet potatoes, bananas, and climbing beans;
- Introduction and dissemination of improved technologies for post-harvest handling such as drying, storage, and value-addition; and
- Provision of market information and strengthening farmers' groups through training in marketing and management of small-scale farm businesses, and linking farmers to potential buyers. Commercial seed growers were also promoted.

Agricultural interventions continued in 40 of UFSI-I communities that had been included towards the end of UFSI-I to consolidate the gains achieved, and began in 36 new villages in early 2003 (phasing out some of the UFSI-I villages). Early in 2004, another 36 villages were added bringing the total number to 113.

Partners: This component has worked closely and successfully with a wide range of partners. Among the most significant is NARO which has been instrumental in producing start-up seed and planting materials for various crops to support the project's interventions. NARO has also provided technical backstopping to ensure the promoted technologies are extended well (training of farmers as well as Africare staff). Africare contributed to this partnership by developing farmers' groups to work with and identify their needs. CIAT has also been an important partner. In collaboration with CIAT, Africare has developed the capacity of smallholders to penetrate competitive market chains using participatory market research methodologies. As a result, Africare-supported groups now have contracts with restaurants and other enterprises.

The evaluation team was impressed by the large number of Africare groups working with NAADS.Farmer groups have registered at the sub-county and requested NAADS services. This is working to everyone's benefit: where Africare is working, progress of NAADS' interventions has been much faster, and NAADS also complements Africare by providing services for enterprises and groups developed by Africare, so that when the latter pulls out, activities can be sustained.

To train farmers in marketing, Africare partnered with the Enabling Rural Innovations project, implemented by CIAT, which seeks to enhance smallholder capacity to penetrate markets. An MoU was signed between CIAT and Africare in October 2003, and this partnership has been highly effective.

Performance: Despite drought and crop diseases, interventions of this component have performed well and clearly reduced food insecurity among the Africare communities. At baseline, the average months of adequate household food provisioning was 4 compared to 6.2 at the end of FY05, or 103% of the LOA target. Volumes of production and yields of Africare-supported crops have all increased, with yields of beans and orange-sweet potatoes already exceeding LOA targets (e.g. bean yields have grown from 0.8 MT/Ha at baseline to 1.8 MT/Ha at the end of FY05—an increase of 120%, reflecting the adoption of better varieties and integrated disease management training). Some 2,903 households (64% of LOA target) are currently practicing at least 3 improved agronomic practices compared to the 450 reported at the baseline of 2001. Post harvest losses have declined dramatically, especially for potatoes. Because of the construction of diffused light potato stores built by farmer groups, potato losses have been reduced from 40% to 10%, far exceeding the LOA target of 20%.

Regarding marketing activities, 680 farmers have been trained in marketing skills and 19 new agro-based enterprises have been established (95% of LOA target of 20). These include honey production (one firm exporting organic honey to Europe), potato suppliers for the crisps and chips market in Kampala, and others exporting dried chili. This is an impressive performance.

Farmer Field Schools (FFS): It is clear that the practical and integrated training approaches used have enhanced technology adoption among Africare farmers. Most notable among these approaches are the FFS and on-farm demonstrations. By the end of UFSI-I, 16 FFS had been established and the final

evaluation found them extremely popular among farmers and a very effective training method. Building on this success, UFSI-II encouraged the best performing graduates of these FFS to start FFS in neighboring communities, and this has produced 10 new farmer-run FFS under UFSI-II. In addition, Africare facilitated graduates of FFS to have a contract with Nandos (a fast food restaurant in Kampala) to provide Irish potatoes on a regular basis. As one of these graduates said: *"What Africare has done in this area can be seen by the blind and heard by the deaf."*

The success of this component reflects the choice of interventions, the participatory village action planning and also the imaginative and resourceful partnerships that have been developed.

NATURUAL RESOURCES MANAGEMENT (NRM)

The goal of the NRM component has been to enhance the conservation and management of soil and other natural resources for sustainable rural development. Interventions have been carried out through building local capacity to plan and implement NRM interventions. Communities have been trained to identify problems and opportunities, undertake resource mapping and develop and implement action plans to conserve and enhance natural resource.

Partners: Extensive collaborative arrangements between farmers, project staff and a wide variety of partners have been developed. Africare has drawn on the technical expertise of an impressive range of partners to implement the NRM activities. Among the most important have been ICRAF/NARO, which undertakes research on agro forestry and fruits. The collaboration with Africare involved backstopping Africare-supported farmer groups, training Africare's extension staff, and providing technical support. *This has been a very successful partnership, providing a crucial link between research, development and farming communities. This is a lesson that Africare can use in future activities.*

Also important has been collaboration with **the Kigezi Private Sector, which** trained farmers to conduct farming as a business and also in apiary development for Africare groups. **The participatory approach** of the project has also been instrumental to its success on the ground, particularly through the preparation and implementation of theVillage Action Plans.

Main Activities of the Component

Agroforestry: The promotion of agroforestry technologies in UFSI-II has been done in close collaboration with ICRAF/NARO that developed and tested the technologies promoted by the project. These technologies have provided a range of benefits such as provision of tree products and services, income generation and soil and water conservation. UFSI communities are assisted in raising tree seedlings such as *calliandra* and *greveillea* for multi-purpose uses. *Calliandra* is especially important for stabilizing contour hedgerows and terrace risers, improving soil fertility through nitrogen fixation, and providing animal fodder, firewood and stakes.

Another important agro-forestry intervention has been growing fruit trees, particularly temperate fruits, to enhance soil conservation, nutrition and income generation. Progress of this activity has been impressive. Africare has assisted farmers obtain and plant apple fruit seedlings.

Water harvesting: Water harvesting has helped reduce soil erosion, has increased crop yields (e.g. the digging of trenches has led to large increases in banana yields), and provided households with accessible and cleaner water, which has meant a huge reduction in women's time (often 2-3 hours/day) and energy fetching water. Three technologies have been promoted: ground water harvesting using trenches and ditches, roof water harvesting, and gravity water flow schemes.

Composting: Most households in the target communities cannot afford inorganic fertilizer, so the project trained farmers on transforming household rubbish and crop residues into manure. Compost pits have also improved the sanitary conditions around homestea.

Improved energy saving cook stoves: The Lorena cook stoves were promoted since, compared to traditional stoves, they use 40% less firewood, the major form of energy used by the communities for cooking. The improved stove also produces much less smoke, and saves women time in cooking since several pots can be placed on the stove at the same time.

Performance.

Impressive progress has been made towards achieving the NRM intervention objectives. New technologies are being widely practiced, and their impact is clearly visible. The evaluation team was impressed by farmers' enthusiasm to adopt these new measures and they are also being adopted outside the targeted communities. As of Sept. 2005, the project had conserved 1,550 ha of land against soil erosion – 78% of LOA target, and it is expected that this target can be achieved by end of project. The number of households using at least two improved land management practices was 3,378 – 97% of LOA target.

Agroforestry. The evaluation team noted the **s**trong understanding of the values of agroforestry among beneficiaries and their enthusiasm to adopt the technologies.. However, the availability of seeds for tree nursery development and raising seedlings are insufficient, causing bottlenecks. *It is strongly recommended that the project urgently purchase seeds in sufficient quantities and assist communities to raise and plant the needed seedlings to achieve the desired result.* Planting agroforestry trees was one of the strategies to increase the supply of firewood to households. As of Sept. 2005, 1,583 MT (24% of LOA target) had been harvested, and the amount conserved was 1,175 MT (147% of LOA target). The delay in starting NRM activities due to difficulties in funding meant that the majority of trees planted by the project have not yet reached harvesting stage, hence the achievement shortfall. *It is recommended that NRM activities be extended for at least another 6 months to realize this target (using non-Title-II funds).*

Planting of fruit trees. This has significant benefits (ecologically and nutritionally) and is popular, but requires time to become established. *It is recommended that, after the end of UFSI-II, Africare retain a "window" of a limited level of technical assistance to apple fruit farmers to ensure the sustainability of this activity.*

Watershed Approach: Five watersheds were identified in the region, and in each, collective community action was promoted and regulated by community-developed byelaws, endorsed by local authorities. This approach has proven so successful and is being copied in non-project areas. *It is recommended that future UFSI activities use similar watershed approaches.*

Water harvesting: Ground water harvesting has been popular and there is no doubt that farmers will continue the practice. *However, it is recommended that the length of trenches be recorded in future project activity rather than the numbers of trenches per farm.* Water harvesting from rooftops has improved the quality and availability of water for households, but has not yet progressed to satisfactory levels. The cement water tanks used communally are expensive; the water jars used by households are cheaper but households lack the mould to construct them. *It is recommended that the project looks into using plastic jars and tanks which are cheaper, and explores providing molds for the water jars.*

Composting: This practice could be improved by households having 2 or 3 compost pits so that manure can be collected at different maturity stages. Also, the quantities of manure produced and applied were not documented. Instead, the number of households involved in the activity was recorded which says little about the intensity of composting. *It is recommended that, over the remainder of the project, having several pits at different maturity stages be promoted, and in future activities, the amount of compost produced and applied be monitored.*

Improved Cooking Stoves: This was a very popular intervention and much appreciated by beneficiaries. However, as of Sept. 2005, only 1,279 cook stoves had been constructed (64 % of target) due mainly to the lack of appropriate clay in the vicinity. *It is recommended that groups be facilitated to overcome this*

constraint as these stoves have huge positive benefits for the household and the environment. For example, in Kisoro where soil is volcanic, the project's tipper could be used to transport clay from nearby sites to those villages without clay.

Given the progress registered so far, the NRM component will be able to accomplish most targets by the end of project. This favorable performance can be attributed to the wise choice of interventions, excellent partners, and the community participatory approach. *As noted, however, some targets need more time to be realized. An extension of at least 6 months with non-Title II funding is strongly recommended this for component.*

COMMUNITY ROADS

The steep slopes and the high rate of soil degradation from adjacent agricultural areas complicate community road planning, construction and maintenance in southwestern Uganda. Another complicating feature is the area's extremely high population density and land fragmentation, which exacerbate the normal problems of finding compensatory landholding for populations displaced by road construction. The land fragmentation makes it difficult to plan and construct a cost-effective road. For these reasons both UFSI-I and UFSI-II placed a high priority on the development of community roads.

Under UFSI-I, Kabale District benefited through the upgrade of selected community roads, and under UFSI-II, this was expanded to the other four districts. The project planned to develop 20 km of community roads per district, targeting 100 km. To date, 75 km out of the 100 km targeted in the DAP have been completed. Of these, 47 km of roads have been constructed and handed over for maintenance to the districts of Kabale and Ntungamo.

The community roads activities evolved as follows:

- **Identifying the roads**: Africare undertakes a road identification process together with the district team, which gives Africare a list of priority roads. The selection of the roads from this list is then made collaboratively by Africare and the District Government based on four criteria: the road must link inaccessible areas; it must connect with targeted communities in the project; it must be economically viable and feasible; and it must have a large potential benefit for those in most need.
- **Environmental Impact Assessment (EIA) and Community Sensitization:** After obtaining USAID and NEMA approval of the EIA, discussions are held with the communities alongside the proposed road and other stakeholders to consider the road's impact, both positive and negative, and to anticipate needed actions. In particular, communities are sensitized on road construction and maintenance, including the importance of growing trees and shrubs along the road.
- **Planning, design and constriction**: Project staff mobilize the equipment to be used, assisted in some cases by equipment from the district authorities. Construction begins, and communities alongside the constructed roads, together with district authorities, maintain the roads.

Partnership and Participation: As with the other components, the partnership and participatory approaches have been central to the community roads development. Key partners have been the District Administration Officers of the project areas who have been fully involved in the choice, construction and maintenance of the roads. Others are private sector garages, which service the vehicles, and other organizations with which the project shares similar interests.

Road Name/District	Planned Road Length	Road Length Completed	Remarks
Kabale District Total (LOA target 20.0 km)	**25.0 km**	**25.4 km**	Completed & handed over, maintained by petty contractors

Ntungamo District Total (LOA target 20.0 km)	**21.9**	**21.7 km**	Completed & handed over, maintained by 'road gangs'.
Kanungu District Total (LOA target 20.0 km)	**20.7 km**	**20.7**	Completed but not yet handed over.
Kisoro District			Ntebeko – Mgahinga road section completed but not yet handed over, Murara -Muhangi road is under construction.
Ntebeko – Mgahinga	6.3 km	6.3	
Murara – Foto – Muhangi	15.6 km	0	
Total (LOA target 20.0 km)	**21.9 km**	**6.3 km**	
Rukungiri District			EIA approved by USAID and NEMA. Construction to begin in March/April.
Kacence -Nyakishenyi	11.8 km	0	
Buyanja - Nyakaina - Mineera	10.8 km	0	
Total (LOA target 20.0 km)	**22.6 km**	**0**	
Overall Total	**112.1 km**	**74.1 km**	

Performance: The opening up of the roads has led to an impressive emergence of new markets, schools, health centers, and businesses along the roads in all areas. As of Sept. 2005, 116 new businesses/services had sprung up along the new road (64% of LOA target). It is expected that, once the Rukungiri roads are completed, the LOA target will be realized. Maintenance of the roads is impressive and done mostly by local communities and/or contractors. There are good opportunities for sustainability by training community members in road construction and maintenance. With appropriate tools and equipment, these members have the opportunity to start village enterprises in road construction and maintenance and other activities such as water and irrigation schemes.

NUTRITION

High levels of rural poverty and malnutrition are particularly evident in southwestern Uganda, which has the highest level of stunting in the country (39.3%). To address this problem, this component has sought to improve household nutrition, particularly for women and children under five and sanitation. The main activities have been:

Nutrition Education: The project set up community-based nutrition education centers where nutrition and sanitation education sessions are held. Local community leaders have helped enforce the adoption of good sanitation practices. Some communities have formulated bylaws to govern proper pit latrine construction and and other practices. The end term survey results show that there have been huge improvements in sanitation in the targeted villages, with 96% of targeted households now have a pit latrine.

Child Growth Monitoring and Promotion: Volunteers in target villages were trained and equipped to monitor the growth of children under five, in collaboration with district health officials. To date, a total of 7,218 children have registered in growth monitoring and promotion and 185 community-based growth promoters (GPs) have been trained under a collaborative arrangement with the Ministry of Health and district health officers. It is planned that a further 41 community-based volunteer child GPs from FY 04 and FY 05 villages be trained in FY 0, bringing the total number of volunteer mothers to 226.

Dark Green Leafy Vegetable, Fruit and Orange-fleshed Sweet Potatoes Promotion: The project has emphasized strongly the importance of the communal and household backyard vegetable gardens (BYGs) as an important way to increase the production and consumption of micronutrient-rich foods. To further promote foods rich in vitamin A, the project promoted orange fleshed sweet potato production and consumption. By the end of FY 04, a total of 1,080 households had established orange-fleshed sweet potato gardens.

Small livestock promotion: Protein-Energy Malnutrition is extremely high in southwestern Uganda, so the project promoted the practice of raising small ruminants particularly rabbits and pigs. Small ruminants are traditionally not owned and controlled by men, giving women independent control over the

animals, which they could then include in the family diets. Rabbits have a high multiplication rate, do not require special feeding, making them a cheap source of animal protein for households. Under UFSI-II, 16 community-based rabbit multiplication centers and 16 community-based pig multiplication centers have been established. These centers have been very successful..

Provision of safe water and sanitation facilities: To address domestic water needs, the project promoted the water harvesting of water from rooftops, as discussed in the NRM section earlier. As a result,, women save both time and energy by not having to walk long distances in very hilly terrain to collect water. However, clean water is still a challenge especially in Kisoro during the dry season where women have to go to water sources two to three hours away. The demand for water tanks far exceeds the present availability.

Performance: This component has produced very good results. The enrollment of children in the GMP has reached an impressive 83% of LOA target, with 106 UFSI-I and 103 UFSI-II villages covered. More children are expected to be enrolled over the remainder of the project, and it is expected that the target will be achieved. GMP activities have attracted mothers not in the targeted groups – a positive spillover effect. On the other hand, the indicator on exclusive breastfeeding of babies up to 6 months of age has only increased from 40% at baseline to 47% in FY05, and the LOA target of 80% is unlikely to be reached. The reason for this shortfall is that mothers work in fields far from home and to where it is difficult to carry a child. So they only breast fed until the child could be left in care of younger siblings. This was not, apparently, taken into account when setting this target.

The reduction in stunting has been equally impressive. The stunting of children 24-25 months was 30% in Sept. 2005, only slightly higher than the LOA target of 29%, and a considerable reduction from the 36% at baseline. The target is expected to be realized by end of project.The percentage of underweight children 0-35 months as of Sept.2005 was 22% against the targeted 19% and well below the baseline figure of 28%. The household dietary diversity also improved in the targeted households from 4.3 at baseline to more than 6.0 for all household members according to the Final Evaluation Report (no such estimates were available in the FY05 Results Report). The project has emphasized women's participation and equipped them with relevant nutrition information, thereby benefiting all household members. The improved utilization of vegetables and fruits is especially noteworthy. It is expected that the LOA target of 7 is achievable given that the FY05 villages are increasingly following better nutrition practices and that the rabbit multiplication will be accelerated.

Toilet coverage has improved in the targeted communities with 70% of households now adopting adequate sanitation practices (compared tot only 37% in non-targeted households). Some groups, however, had difficulty digging latrines because of underlying volcanic rock

Exit and Sustainability Strategies.
The project is scheduled to close on Sept..30, 2006. As noted both in the MTE and in this Final Evaluation Report, the project has recorded some remarkable successes. In a region where extreme poverty and environmental deterioration were endemic, where remote villages had few, if any, roads, where children had very high rates of preventable diseases and suffered from severe malnutrition, and where food shortages plagued the population, the impact of this project has been remarkable. This is evident not only from the indicators, but from the palpable enthusiasm of the project beneficiaries, and the obvious positive impact on their well-being. Yes, there have been setbacks – some administrative difficulties, funding uncertainties, and unexpected weather extremes, but the considerable improvement in the quality of life of the beneficiaries cannot be disputed.

The challenge now, before the project closes and within the available resources, is to ensure that systems and linkages are in place to promote the sustainability of project activities. In many ways, Africare is in a strong position to do this: having developed cohesive and dynamic farmer groups and worked in close

partnership with many organizations contributes in a critical way to the sustainability of project activities. Over the remaining project period, the following key issues need to be addressed:

The Farmer Communities. Do the supported communities have sufficient motivation and capacity to continue on their own should no other partner or agency come to their aid? If not, what can the project do to strengthen this motivation and capacity over the remainder of the project? *It is recommended* that groups be identified that could benefit from additional training in group capacity building and the project makes a special effort to provide such training over the remainder of the project. Leaders from these groups should be given additional training in group dynamics, in how to approach potential partners/agencies, and in what to request from local government officials. *It is also recommended* that selected communities be trained in writing simple proposals that can be presented to development partners for funding.

NGOs and other Agencies. Are there competent and relevant agencies or partners that will continue in the villages when UFSI-II closes? What can feasibly be done to develop linkages with appropriate NGOs and other agencies before the project closes? *It is recommended* that, over the remainder of the project, staff identify such agencies or partners and a strategy to link them with appropriate farmer groups. *It is recommended* that Project management holds a workshop (or workshops) where leaders of selected farmers' groups could meet with NGOs and other relevant agencies to discuss common interests and plan joint activities. Local government officials should be also be invited. Special attention to the NAADS program *is recommended*, and farmers be encouraged to register as a group and request services from NAADS.

Local Government. What should be the role of the local government in this process, and what can realistically be expected of them? *It is recommended* that section heads in collaboration with field staff identify interested and motivated local government officials who would give support to farmers in conjunction with NGOs and other agencies once the project closes. Once such officials are identified, it is recommended that the PM (and if possible, the CR) together with the section heads visit with them and formally request their continued support in specific activities.

Private Sector. How can the private sector play a role in supporting the communities, and what is needed to facilitate this before the project closes? Linkages with certain private sector partners have already been made, but more should be done. *It is recommended* that a concerted effort be made to promote linkages between private sector partners (e.g. traders, entrepreneurs, retailers and wholesalers), and farmers. There is already considerable informal trading in the area but, as the farmers' capacity to produce a surplus for sale increases, further linkages will be needed. Private sector partners should be invited to the workshop(s) proposed above.

It is also recommended that linkages be made with any market information services in the area, and that the possibility be looked into of using local radio to broadcast market prices of agricultural products and inputs. The broadcast could also give information about transport availability for produce. The project's nutrition section head is already broadcasting weekly on nutrition advice (funded by the GINA project). The possibility of the GINA project also supporting such a market information service should be explored.

Africare. There is clear evidence that the longer the project has a presence in communities, the stronger the cohesion of beneficiary groups and the more likely the adoption of promoted interventions. The field visits of the evaluation team as well as the end-term survey findings clearly show that households that have spent longer with the project are benefiting much more from Africare's interventions than those taken up later. This is because, while the groups formed first have adopted new practices well, those formed towards end of the project (especially FY05 groups) lacked in-depth understanding of issues and the adoption of practices was relatively low, thus requiring additional support.

Request for an Extension of UFSI-II with non-Title II Funding *The Final Evaluation team strongly recommends an extension for the project after September 30, 2006.* It is clear that funding would have to come from non-Title II resources, and it is recommended that USAID together with Africare seek possible funding sources to support the following activities:

- A skeleton staff in the Kabale office for a twelve-month period to supervise remaining Africare activities and facilitate the transition to complete phasing out.
- Continuation of the NRM activities for a further period of at least six-months. This intervention takes time to become fully understood and adopted by communities. New groups in the project need continued support to encourage them to adopt recommended practices, and sustain them.

To ensure the commitment of groups, especially those formed in FY04 andFY05, to adopting the activities promoted by these interventions, an extension of at least an additional six-month is strongly recommended. Since the number of villages to be covered would be limited, the extension would be at a reduced level of operation than the present level, but it is the view of this evaluation team that such an extension would be invaluable to promoting the successful adoption of these interventions.

Preparation of a Documentary Video: There is much to learn from the success of the UFSI project. It is *recommended* that a video be prepared to document the evolution of the UFSI project, to examine the synergies of its multi-sectoral approach, to present the challenges of the funding process, and to demonstrate the positive impact that the project has had on the lives of beneficiaries. Such a video would need to be prepared before the end of the project

CHAPTER 1 BACKGROUND AND PROJECT EVOLUTION

1.1 Introduction

The Uganda Food Security Initiative Project – phase two (UFSI-II) is a four and three-quarter year (57 month) USAID-funded Title II development activity program, implemented by Africare Uganda. The project was initiated in January 2002 and is scheduled for completion on September 30, 2006. The project has built on the success of phase one (UFSI-I) and has continued to pursue the broad goal of improving household food security in Uganda, particularly in southwest Uganda where rural poverty and malnutrition are especially severe. The project seeks to increase the quantity of food produced and reduce post-harvest losses, improve farm family access to food by raising family income, and enhance the quality of food consumed at home. The project targets an estimated 21,252 households (around 150,000 people) in 144 villages in the districts of Kabale, Kisoro, Ntungamo, Kanungu, and Rukungiri.[2]

A final evaluation team visited Uganda from January 9 to 26, 2006 to undertake an independent and comprehensive review of the achievements of UFSI-II with respect to the original goals, objectives, and targets identified in the original project (DAP), and the results specified in the Detailed Implementation and Monitoring and Evaluation Plan (DIP) of July 31, 2002. The team consisted of Katrine Anderson, Team Leader, Richard Basalirwa, Nutrition Specialist, Hans Mwesigwa, Roads Engineer, John Okorio, Natural Resource Management Specialist, and Dick Sserunkuma, Agricultural Economist. The team benefited from the participation in the field of David Mutazindwa, USAID PMS/Food Security Specialist.

This report of the final evaluation team evaluates how well the project activities have been executed, assesses the adequacy of measures taken to ensure sustainability of the project activities, and makes recommendations on implementing the remainder of the project and on subsequent project activities of Africare. All activities under UFSI-II are evaluated on their individual merits as well as on their impact as complementary interventions launched in pursuit of the overall goal – enhancing food security in southwestern Uganda The terms of reference for the team are presented in Annex I.

The team first met with country office staff in Kampala for briefing. A briefing was also held with USAID staff in Kampala. The team then proceeded to Kabale where project staff presented end-term status reports for all project components and for Monitoring and Evaluation (M&E). The team undertook field visits to villages in the districts of Kabale, Kisoro, Ntungamo, Rukungiri and Kanungu, and also met with local officials in the districts, and staff from partner organizations to the project. Upon returning to Kampala, the team debriefed staff at the USAID mission, and prepared this report presenting the findings of the evaluation team.

In addition to the field visits, this evaluation is based on data collected during the end-term household survey conducted September 2005, which provides a temporal analysis of the achievement levels for key indicators as reported in the baseline survey in 2002 and in USFI-II Indicator Performance Tracking Table (IPTT 2005).

1.2 Project Context

Despite the positive economic growth that Uganda has experienced over the past decade, it remains one of the poorest countries in the world. The UN Human Development Index (based on life expectancy,

[2] In July 2001, Rukungiri was divided into two districts: Rukungiri and Kanungu.

educational attainment and standard of living) ranks Uganda 144th out 177 countries in the world with 38% of its population still living in absolute poverty (UNDP, 2004). About 80 % of its population are involved in agricultural production, which forms the backbone of its economy. Although Uganda has long been regarded as self-sufficient in food production, agricultural and population statistics indicate that Uganda's self-sufficiency in food production is threatened and the country faces a serious risk of food insecurity. In 1970 when Uganda's population was 9.8 million, total food crop output was 14.1 million metric tons (MT), while in 1997, with a population of about 20.4 million people, total food output was 16.5 million MT. Thus, the per capita food production in 1997 was 44 percent less than in 1970. In the 27-year period (1970-1997), population grew by about 109 percent, while total food production grew by about 17 percent only. The implication of these statistics is that Uganda had more food available per person in 1970 than in 1997 (Bahiigwa, 1999).

Uganda's population grew by a further 21% between 1997 and 2002, and food insecurity is reported to have increased throughout the 1990s in many parts of the country (Appleton, 2001). Poverty remains severe, especially in rural areas, and the problems of low productivity and land degradation are worsening, resulting in declining yields for most food crops. Besides declining soil fertility, the problem of low and declining crop yields is attributed to increased incidence of pests and diseases, and changes in weather (Pender *et al*., 2001), as well as limited use of improved production and post-harvest technologies.

Being a predominantly agricultural country, and because the majority of Uganda's poor live in rural areas and derive their livelihood from agriculture, the people are fully exposed to food insecurity when their own food production fails. This problem is further compounded by the lack of an efficient distribution insecurity (UFSI-II, Mid-term Evaluation Report, 2004) network to move food from surplus to deficit areas, which causes pockets of food insecurity,

The problems of poverty and food insecurity are closely interrelated with those of land degradation and malnutrition. Poverty and food insecurity can contribute to land degradation when poor and food-insecure households are forced to plant crops on steep slopes or if they are unable to keep land fallow, invest in land improvements, or use costly inputs such as inorganic fertilizer. The long-term effects of land degradation are likely to lead to further impoverishment and food insecurity because of reduced crop yields and income, thus completing a vicious cycle of land degradation-declining productivity-poverty-further land degradation.

Malnutrition and food insecurity are also directly related problems in that the amount and nutrient content of the food that one is able to access and consume in relation to the body's requirements affects the nutritional and health status of that individual. Consuming these nutrients in lower amounts than the body requires leads to malnutrition. Therefore, the greater the food insecurity problem, the higher the susceptibility of the population to malnutrition. The high prevalence of child malnutrition at the household level (39 percent of children below 5 years of age being stunted in 2000/2001) clearly shows that food insecurity is a serious problem in Uganda (UBOS, 2001)

The challenge for the Government of Uganda (GOU) and its development partners is to identify policies to effectively address these interrelated problems in a sustainable and equitable way. The government has responded to this challenge by formulating a poverty alleviation strategy[3] (Poverty Eradication Action

[3]The government of Uganda is committed to reducing the proportion of the population living in absolute poverty from 35% in 2000 to below 10% by the year 2017 (MAAIF and MFPED 2000).

Plan (PEAP), whose key strategies include the Plan for Modernization of Agriculture (PMA), and improved healthcare, rural water, roads and primary education (MAAIF and MFPED, 2000). The PMA seeks to eradicate poverty by transforming subsistence agriculture into commercially oriented farming. Key priorities of the PMA include increasing the role of the private sector in commercial agricultural activities, investing in infrastructure, decentralizing government functions, improving research-extension-farmer linkages, and funding agricultural research and technical assistance to support development, dissemination and adoption of high-yielding and labor-saving technologies by farmers (Ibid.)

Under the UFSI project, Africare is uniquely positioned to complement these government efforts through its interventions. Against the background of a highly successful phase one of the UFSI (UFSI-I) project, Africare developed a regional food security program—UFSI-II—with the goal of improving food security in the southwestern districts of Kabale, Kisoro, Kanungu, Rukungiri and Ntungamo. The objective of UFSI-II is to enhance food security through interventions aimed at increasing agricultural productivity without degrading the natural resource base, improving household nutrition, and increasing accessibility of households in the project area.

1.3 UFSI-I (1997-2001)

The first phase of the UFSI (October 1997- December 2001) aimed to improve food security in Uganda through a four-pronged strategy:

1. **Natural Resource Management** (NRM): To protect soils against erosion and establish the means of maintaining and increasing soil fertility.
2. **Agriculture and Nutrition**: To increase crop yields, reduce post-harvest loss of seeds and food in storage, and improve food utilization.
3. **Rural Roads**: To provide year round road access for commerce, production and marketing.
4. **Local Capacity Building**: To strengthen the organization and capacity of Kabale farmers, institutions, and associations, and the support they receive from the GOU and local NGOs in organizing, implementing and monitoring food security initiatives.

The project began in 21 villages in 1998, expanding to 106 villages by 2000, comprising 5,133 households. By the fourth year, UFSI-I had achieved almost all its original objectives. Some objectives were, in fact, impressively over-achieved. The final evaluation report of UFSI-I, prepared December 12, 2001, concluded: *"This is truly a remarkable project. In a relatively short space of time, and with not a large amount of money, it has been a catalyst for positive and effective change among some 90,000 farmers, not counting the many farmers who have learnt by demonstration the possibilities of progress*." (Executive Summary, pg. xi)

The report also concluded that the participatory and partnership approach was key to the project's success, particularly the full participation of farmers in the project design and implementation. The project's success was also due to dedicated and well-trained project staff, and an innovative project design, involving a multi-sectoral approach to meet the multi-sectoral needs of food security. UFSI-I programming. The final evaluation report recommended a continuation and expansion of project activities in the next phase (UFSI-II).

1.4 Transition from UFSI-I to UFSI-II.

It was against this backdrop that Africare developed a regional food security program, at the request of the GOU. The UFSI–II project was designed: (1) to consolidate the gains achieved by UFSI-I in the 12 sub-counties covered by the first program; and (2) to expand the benefits of the UFSI-I model and

"lessons learned" to four new districts not covered by the previous project: Kanungi, Kisoro, Rukungiri and Ntungamo. The project objective was to enhance food security through interventions aimed at increasing agricultural productivity, improving household nutrition (particularly for women and under-five children), and increasing accessibility of households in the program area.

The project continued most of the core activities outlined in UFSI-I but adapted to the extremely varied microclimates in the new extension zones. To support this transition from UFSI-I to UFSI-II, UFSI-I was extended through December 30, 2001. Other carryover activities included continued support for nutrition education and monitoring in the 12 sub-counties covered under UFSI-I as well as in the 9 new sub-counties covered by UFSI-II (Table 1.1). The project has, however, phased out its agricultural and roads construction support for the UFSI-I target villages. The phasing out strategy and the up-take of new villages under UFSI-II is presented in Table 1.1.

Parallel to the transition from UFSI-I, UFSI-II took on 36 villages annually up to the fourth year of implementation (FY05), so that by the end of UFSI-II, 144 villages will have benefited from the project.

Table 1.1. Phase-out Activities under UFSI-II in UFSI-I Villages and Up-take of New Villages

Districts and Villages Targeted by UFSI-I and UFSI-II	**Phase-out Interventions/Activities under UFSI-II in UFSI-I Target Villages**			
	Agriculture and Natural Resource Management		**Nutrition[4]**	
	FY02 (# of villages phased out by end of FY02)	***FY03*** (# of villages that will be phased out FY03.	***FY02*** (# of continuing villages)	***FY03*** (# of continuing villages)
UFSI -I Kabale District 106 villages	66	40	106	106
Up-take of New Villages for Agriculture and NRM and Nutrition Interventions				
	FY02	**FY03**	**FY04**	**FY05**
UFSI-II				
1.Kabale	9	9	9	9
2.Kisoro	9	9	9	9
3.Ntungamo	9	9	9	9
4. Kanungu	3	3	3	3
5. Rukungiri	6	6	6	6
144 villages	**36**	**36**	**36**	**36**

1.5 Evolution of the UFSI-II Activities

1.5.1 Selection of Target Villages and the Baseline Survey.

[4] Unlike the agriculture and post harvest handling and natural resources management components, the nutrition component continued operating under UFSI-2 in 106 villages of UFSI-I and will continue until the end of FY 03. This is due to the late start of the nutrition component under UFSI-I.

UFSI-II began operations in 2002 in the target sub-counties of Kabale, Kisoro, Ntungamo, Rukingiri and Kanungu Districts in southwestern Uganda. The region has a high population density of 280 people per km^2 and significant land shortages and fragmentation. Agricultural production in the region is derived from an average of 0.2 ha per person, or 1.2 ha (< 1 ha in the highlands) for a typical household of 7 persons on average. Due to the high population density and intensive cultivation on steeply sloping land, land degradation critically threatens the region's food security. Yet, as discussed above, sustainable poverty reduction and economic growth are highly dependent on the intensification of agricultural production. The challenge is to achieve this without further degrading the environment. The region also suffers from a higher level of malnutrition than the rest of the country and the level of stunting among under-five children is 48%, the highest in the country and well above the national average of 39% (UBOS 2000/2001).

Project activities have been carried out in 144 villages located in 12 sub-counties and 36 parishes in the 5 districts. The selection of the 12 sub-counties was based on the severity of food insecurity. At the outset of the project in 2002, to provide a base against which the future impact of the project would be measured, Africare conducted a Baseline Survey in 36 LC-1s from 9 intervention sub-counties in each district. The survey revealed that about 50% of the households experienced food shortage, with household members being unable to eat to satisfaction for a period of 3-6 months in a year. The most important causes of food insecurity were reported to be unreliable rainfall, crop diseases and pests, and depleted soil fertility. Post-harvest losses were high (40% for potatoes and 30% for beans in a period of 3 months). Some 79% of households had a problem of soil erosion on their fields and 88% of these households noted that the problem was increasing. 96% of households reported declining crop yields, and 34% said their land was no longer useful for crop production because of fertility loss; 31% of these had abandoned it or left it bare. On average, the survey found that 45% of the under-five children were stunted and 21% were under-weight, findings closely in line with the UBOS survey of 2000/2001.

1.5.2 Objectives of UFSI-II.

The three main objectives of UFSI-II were:

Objective 1.0: Increased Agricultural Productivity

Sub-Objective 1.1:	Increasing the volume, quality and variety of food produced and available for household consumption.
Sub-Objective1.2:	Increasing the value of household agricultural enterprises through enhanced production, post-harvest handling/storage, value-added processing and marketing.
Sub-Objective 1.3:	Enhancing conservation of soil, water and other natural resources in the project area.

Objective 2.0:	***Improved Household Nutrition, Particularly for Women and Children Under Five***
Sub-Objective 2.1:	Reduction in malnutrition in young children and women; and
Sub-Objective 2.2:	Increased nutritive value of family diets, especially for women and young children.

Objective 3.0:	***Increased Accessibility of Households in the Activity Area through Community Roads Construction***

1.5.3 Principle Project Interventions

To achieve these objectives, interventions focused on four main areas: improving agricultural production, post-harvest handling and marketing; better management of natural resources, household nutrition, and farm-to-market road improvements in target villages in each district.

1. Agricultural Production / Post Harvest Handling / Marketing *(AG/Mon)*
   - The introduction and dissemination of improved inputs and technologies for food and cash crop production (including improved seeds and agricultural technical packages).
   - The introduction and dissemination of improved technologies for post harvest handling such as drying, storage, value-added products and transport.
   - The provision of market information and training to strengthen farmers' marketing groups.

2. Natural Resources Management (NRM)
   - The dissemination of improved technologies for controlling erosion and increasing soil fertility including crop rotation and terrace construction and maintenance.
   - The promotion of economically viable agro-forestry techniques.
   - The promotion use of fuel-efficient stoves, backyard composting, rainwater harvesting, and zero grazing.
   - Roadside planting and slope stabilization in conjunction with the roads component

3. Household Nutrition *(HN/Mon)*
   - The establishment of a village-based growth monitoring program for children aged 3-35 months, promotion of exclusive breast feeding to six months, provision of adequate complementary foods thereafter, and implementation of activities for the recuperation of malnourished children in the homes of "Model Mothers" (Hearth Model Program).
   - The training of mothers in household diet diversification, improved nutrition, vegetable production and animal husbandry (dairy, rabbit and pig production).
   - The training of communities in proper sanitary practices, HIV/AIDS awareness, and other primary health care issues.

4. Community Road Improvements *(AG/NUT/Mon)*
   - The rehabilitation of farm-to-market community roads to ensure year round vehicle access.
   - The conducting of NEMA[5] and USAID Environmental Reviews prior to construction.
   - The training of communities in labor-intensive road rehabilitation and maintenance practices.

1.5.4 The Participatory Approach.
UFSI-II continued the participatory approach followed under the first phase. Farmers have been involved from the outset in problem identification, action planning, and developing their Village Action Plans (VAPs). The election by villagers of a Food Security Committee (FSC) to coordinate the activities of the VAP and handle relations with external partners is equally important. This participatory approach has been very important in project implementation and developing cohesive groups. As in UFSI-I, the second phase also sought to implement its activities by developing the capacity of farmer groups and partner sub-county governments to plan, budget, implement, and evaluate food security activities.

1.5.5 The Partnership Approach.

[5] NEMA is the National Environmental Management Authority (of Uganda)

An important feature of the UFSI approach has been the extensive collaborative arrangements with a wide variety of partners. Many project activities have been executed through formally negotiated partnerships; others have been less formal. This ability to utilise partnerships and the resultant synergies to achieve project objectives has contributed in an important way to the project's success. Through a collective effort rather than working alone, Africare draws on the technical expertise of a wide range of partners. This benefits not only the farmers, but also the partner agencies. Specific examples of such partnerships are given in subsequent chapters of this report.

1.5.6 Project Design.

The design of the project was extremely well conceived. The components mutually reinforce each other and create a synergy that gives the project cohesion and dynamism. Road construction opens up new areas to agricultural inputs and outputs, agricultural activity is raised by introducing new species and technologies, post-harvest losses are reduced by new storage facilities, soil erosion control and conservation measures improve soil fertility and hence land productivity, and the nutrition interventions promote a better utilization of food, and hence a less food insecure population.

1.6 Performance Indicators and Targets.

The performance indicators are summarized in Indicator Performance Tracking Table (IPTT Table 1.3). The annual targets in IPTT are based on the projected annual increase in population to be served, resources available (personnel, materials) at the time of initiating an activity. The UFSI-2 accomplishments with respect to annual targets are summarized in Table 1.3. The progress of project interventions was tracked against the annual targets set in the Detailed Monitoring and Evaluation Plan (DIP). A more detailed discussion of annual results is presented in Chapters 3 – 6 which evaluate progress by sector.

Table I.2 Africare UFSI-II Indicator Performance Tracking Table, FY 2001-FY2005

Indicator	Base-line	FY 02 Tgt	FY 02 Ach	FY 02 Ach vs. Tgt	FY 03 Tgt	FY 03 Ach	FY 03 Ach vs. Tgt	FY 04 Tgt	FY 04 Ach	FY 04 Ach vs. Tgt	FY 05 Tgt	FY 05 Ach	FY 05 Ach vs. Tgt	FY 06 Tgt	FY 06 Ach	FY 06 Ach vs. Tgt	LOA Tgt	LOA Ach
Objective 1: Increased agricultural productivity																		
Impact Indicator 1.1 Avg. months of adequate household food provisioning	4					4.34	NA	5	4.5	90%	5.5	6.2	113%	6			6	
Impact Indicator 1.2 Capacity of communities & local govt. to plan and implement Food Security Interventions (measured in terms of scores on FSCCI)	20				40	43	107%	55	50	91%	70	59	84%	80			80	
Sub Objective 1.1: Increased volume, quality and variety of food produced and available for household consumption and sale																		
Impact Indicator 1.1.1 Avg. annual vol. (kg) of HH production of:																		
Potatoes	600	650	600	92%	1000	950	95%	1200	1220	102%	1400	1,148	82%	1500			1500	
Beans	100	120	100	83%	150	120	80%	200	140	70%	210	183	87%	250			250	
OS Pot.	812	850	812	95%	920	1000	108%	980	1000	102%	1000	540	54%	1040			1040	
Bananas	2500	2500	2500	100%	2800	2650	95%	3000	2650	89%	3200	3160	99%	3300			3300	

Indicator	Base-line	FY 02 Tgt	FY 02 Ach	FY 02 Ach vs. Tgt	FY 03 Tgt	FY 03 Ach	FY 03 Ach vs. Tgt	FY 04 Tgt	FY 04 Ach	FY 04 Ach vs. Tgt	FY 05 Tgt	FY 05 Ach	FY 05 Ach vs. Tgt	FY 06 Tgt	FY 06 Ach	FY 06 Ach vs. Tgt	LOA Tgt	LOA Ach
Impact Indicator 1.1.2 Average yield in (MT/HA) of:																		
Potatoes	9	9.5	9.0	95%	10.0	13.2	132%	10.5	13.2	126%	11.2	10,2	91%	12.2			12.2	
Beans	0.8	0.87	0.8	92%	0.96	0.85	89%	1.05	0.87	83%	1.5	1.8	120%	1.25			1.25	
OS Potatoes	3.9	4.3	3.9	91%	4.3	4.2	98%	4.3	4.6	107%	4.6	5.0	109%	5.0			5.0	
Bananas	16.0	16.5	16.0	97%	17.5	17.0	97%	18.0	17.0	94%	18.0	17	94%	19.0			19.0	
Monitoring Indicator 1.1.1 # HH adopting at least 3 improved agronomic practices	450	1,360	450	33%	2,360	1,080	46%	3,000	2,860	95%	3,500	2,903	83%	4,536			4,536	
Sub-Objective 1.2: Increased household agricultural incomes through enhanced production, post-harvest handling/storage, value-added processing and marketing																		
Impact Indicator 1.2.1 Avg. value per participating HH of crop production (Constant 2002Ug.sh 000)	385							476	tbd[6]			552	94.8**%**	561			561	
Monitoring Indicator 1.2.1 % losses post harvest:																		
Potatoes	40%	40%	40%	100%	37%	36%	103%	30%	32%	94%	22%	9.9%	222%	20%			20%	
Beans	30%	30%	30%	100%	27%	28%	96%	22%	24%	92%	16%	16.5 %	97%	10%			10%	
Monitoring Indicator 1.2.2 # of newly established agro-based enterprises	0	12	1	8.3%	20	16	80%	20	18	90%	20	19	95%	0			72	

[6] To be determined during an end-line survey.

Indicator	Base-line	FY 02 Tgt	FY 02 Ach	FY 02 Ach vs. Tgt	FY 03 Tgt	FY 03 Ach	FY 03 Ach vs. Tgt	FY 04 Tgt	FY 04 Ach	FY 04 Ach vs. Tgt	FY 05 Tgt	FY 05 Ach	FY 05 Ach vs. Tgt	FY 06 Tgt	FY 06 Ach	FY 06 Ach vs. Tgt	LOA Tgt	LOA Ach
Sub-Objective 1.3: Enhanced conservation of soils and other natural resources																		
Impact Indicator 1.3.1: Area of Land Protected/ Used Per Environment Action Plans (HA)	0	80	0	0	320	700	218%	760	985	130%	1,360	1,550	112%	2,000			2,000	
Impact Indicator 1.3.2: MT of wood: Harvested Conserved	0 18.0	0 118	0 43.2	0 36.6	0 350	0 NA	0 NA	640 600	576 642	90% 107%	1,920 700	1,583 1,175	82% 168%	4,160 800			6,720 800	
Objective 2: To improve household utilization of nutritious food, particularly for women and children under-5																		
Impact Indicator 2.1. Reduction in % stunting of children aged 24-59 mos.	36.4%							33%				30%	97%	29%			29%	
Impact Indicator 2.2 Reduction in % underweight (<-2 standard dev. Below norm) children (0-35 mos.)	27.8%	N/A	N/A	N/A	25%	26.9	32%	23%	tbd		21%	22%	95%	19%			19%	
Impact Indicator 2.3 Avg. Dietary Diversity Scores at: HH level Men Women Children 6mos.+	4.3 3.6 4.2 4.0					4.39 3.8 4.32 4.2	NA NA NA NA	5.0 5.0 5.0 5.0			5.5 5.5 5.5 5.5	6.3 6.2 6.2 6.4	115% 113% 113% 116%	7.0 7.0 7.0 7.0			7.0 7.0 7.0 7.0	

Indicator	Base-line	FY 02 Tgt	FY 02 Ach	FY 02 Ach vs. Tgt	FY 03 Tgt	FY 03 Ach	FY 03 Ach vs. Tgt	FY 04 Tgt	FY 04 Ach	FY 04 Ach vs. Tgt	FY 05 Tgt	FY 05 Ach	FY 05 Ach vs. Tgt	FY 06 Tgt	FY 06 Ach	FY 06 Ach vs. Tgt	LOA Tgt	LOA Ach
Monitoring Indicator 2.1 Number of children registered in GM program of UFSI	0	1,620	0	0	3,420	2872	84%	7,020	5,269	75%	8,640	7,151	83%	8,640			8,640	
Monitoring indicator 2.2: % mothers exclusively breast feeding children up to 6 mths	40%	40%	40%	100%	60%	46%	77%	65%	49%	75&	80%	47%	59%	80%			80%	
Monitoring Indicator 2.3 % households adopting adequate sanitation practices according to UFSI index	41%	45%	41%	91%	50%	48%	96%	60%	59%	98%	65%	70%	108%	70%			70%	
Objective 3: Increased accessibility of households (HH) in activity area																		
Impact Indicator 3.1 # of new businesses/ services along upgraded roads by type.	0	0	0	0	63	56	89%	108	84	78%	144	116	81%	180			180	

Indicator	Base-line	FY 02 Tgt	FY 02 Ach	FY 02 Ach vs. Tgt	FY 03 Tgt	FY 03 Ach	FY 03 Ach vs. Tgt	FY 04 Tgt	FY 04 Ach	FY 04 Ach vs. Tgt	FY 05 Tgt	FY 05 Ach	FY 05 Ach vs. Tgt	FY 06 Tgt	FY 06 Ach	FY 06 Ach vs. Tgt	LOA Tgt	LOA Ach
Impact Indicator 3.2 Avg # of daily trips of autos & trucks on upgraded roads: Planting season Harvest season	0 trip/day 0 0	 2 3	 1 2	 50% 66%	 2 3	 4 7	 200% 233%	 10 11	 57 11	 570% 100%	 11 15	 61 15	 555% 100%	 10 15			 10 15	
Monitoring Indicator 3.1 # km motorable road rehabilitated to GOU Standards	0	20			45	31.2	69%	70	60[7]	88%	95	75	79%	100			100	
Monitoring Indicator 3.2 km of roads maintained by local government/ communities	0	0	0	0	30	0	0%	55	47	86%	80	47	59%	100			100	

[7] 25.3 Km in Kabale and 21.7 Km in Ntungamo Districts were handed over to Local governments for maintenance; 13 Km in Kanungu District is motorable but not yet handed over.

CHAPTER 2: Project Institutional Structure and Management

2.1 Organizational Structure

2.1.1. Africare Headquarters

Africare's Uganda Food Security Initiative is one of nine food security projects developed by Africare's Food for Development (FFD) Unit in the Africare headquarters office in Washington, D.C. The direct administrative link of the project to Africare's headquarters office is through the East Africa Regional Office with support for proposal development, project implementation, monitoring and evaluation, and monetization provided by the Africare/Food for Development Unit. The Africare/FFD unit is the main administrative link between Africare and the USAID/FFP office that oversees USAID's FFP Title II programs as well as various support services for these programs such as the FANTA (Food Aid and Nutrition Technical Assistance), the Food Aid Management (FAM) consortium in which Africare is particularly active, and the Monetization Task Force in which Africare plays a prominent role.

2.1.2. Africare/Kampala and USAID/Uganda

All Africare activities in Uganda are under the direct oversight of the Africare Kampala office. The country office is the major source of backup on procurement of items for the project. The country office is also the main administrative link between the project and Ugandan government as well as USAID and other NGOs. Given the amount of time these activities involve, a percentage of the country office's support (approximately 30% of the salaries of the Africare Country Representative's salary, the administration officer, one secretary and one accountant) is paid for by the UFSI project. The project works with the different USAID development experts responsible for different strategic objectives and M&E, but the main link between the Africare Country Office and the USAID/Uganda Mission is the USAID/Washington Food For Development officer.

The USAID/Uganda office considers the UFSI/Africare project an important support for its strategic objectives. In 2002 USAID initiated the development of a new Integrated Strategic Plan (ISP) for the period 2002-2007 with the goal of directly supporting the PEAP's objective of reducing poverty to 10% or less by 2017. Three Strategic Objectives (SOs) contribute to this goal: *SO 7: Expanded sustainable Economic Opportunities for Rural Sector Growth, SO 8: Improved Human Capacity; and SO9: More Effective and Participatory Governance.*

SO 7: Expanded sustainable Economic Opportunities for Rural Sector Growth: This strategic Objective directly supports the PEAP objective of creating an enabling environment for rapid and sustainable economic growth. It also supports the PEAP objective of directly increasing the ability of the poor to raise their incomes. In addition, it supports Administration objectives of trade, agriculture, and private sector development. It is expected that the main results of this SO will be: (1) Increased food security for vulnerable populations (IR 7.1); (2) Increased productivity of agricultural commodity and natural resource systems (IR 7.2); (3) Increased competitiveness of enterprises in selected sectors (IR 7.3); and Improved enabling environment for broad-based growth (IR 7.4).

SO 8: Improved Human Capacity: This strategic objective directly supports the PEAP objectives of improving the quality of life of the poor and increasing the ability of the poor to raise their incomes. It also supports Administration objectives of improved education and global health improvement. It is expected that the main results of this SO will be: (1) Effective use of social sector services (IR 8.1); (2) Increased capacity to sustain social sector services (IR 8.2); and (3) strengthened enabling environment for social sector services (IR8.3)

SO 9: More Effective and Participatory Governance: This strategic objective directly supports the PEAP objective of improved governance and reduced conflict and improving the quality of life of the poor. It supports Administration objectives of conflict mitigation and improved governance. It is expected that the main results of this strategic objective will be: (1) Devolution and separation of powers strengthened (IR 9.1); and (2) Conflict mitigated and reduced (IR 9.2).

2.2 Africare/Uganda's Medium -Term Strategy

Africare/Uganda's Medium -Term Strategy targets issues concerning agriculture and food security, HIV/AIDs, democracy and governance, water resources and sanitation, environment, agro-micro-enterprise development and education. Regarding the agriculture and food security activities, it is anticipated that, following the closure of UFSI-II, activities will be ***relocated from Southwestern Uganda to Northern Uganda. This will mean phasing out UFSI-II at the end of its life of activity and developing a new DAP for the area(s) to be identified after an exploration survey.***

In Southwestern Uganda, Africare will continue with non-USAID funded programs to address challenges in agricultural production, natural resources management, agro-micro-enterprise development, and access to credit for farm inputs and agro-processing building on current partnerships. In health, Africare will seek partnerships with other development agencies and national programs, thereby enabling Africare to expand Community-based Integrated Management of Childhood Illnesses (CIMCI), HIV/AIDS, malaria, water, and sanitation activities into the districts of Kabale, Kanungu, Kisoro and Ntungamo. Further details of Africare's program in Uganda are given in Annex III.

2.3. Project Administrative Structure and Staff Deployment

The organogram of the Project's organizational structure presented in Figure 2.1 shows staff deployment levels and the reporting hierarchy**.** The main elements of the administrative structure are as follows:

Project Management Level: The Project is headed by a project coordinator, who oversees the project administration and the budget, as well as the technical programs administered by four section heads. The project coordinator is also the main administrative link between the project and the five District administrations and managers of other NGO activities in the region. He reports to the CR. The M&E officer evaluates and reports on the progress of the project and reports to the PC. UFSI-II covers five districts and the District Coordinators oversee implementation of project activities in their respective districts. The District Coordinator based in Rukungiri town oversees implementation of UFSI activities in Rukungiri and Kanungu. These report administratively to the PC.

Heads of Sections and their Staff: The Project has four technical sections, each with a section head. Marketing is a sub-section of the agriculture section. The extension agents in Kabale serve as acting section heads in the absence of the section heads. The section heads supervise extension agents who work directly with farmer groups. In addition to the Community Mobilizer, currently there are 9 extension agents, 3 in Kabale, 2 in Ntungamo, 2.

Figure 2.1 Africare Kabale Organizational Chart
UFSI-II Project (Kabale District)

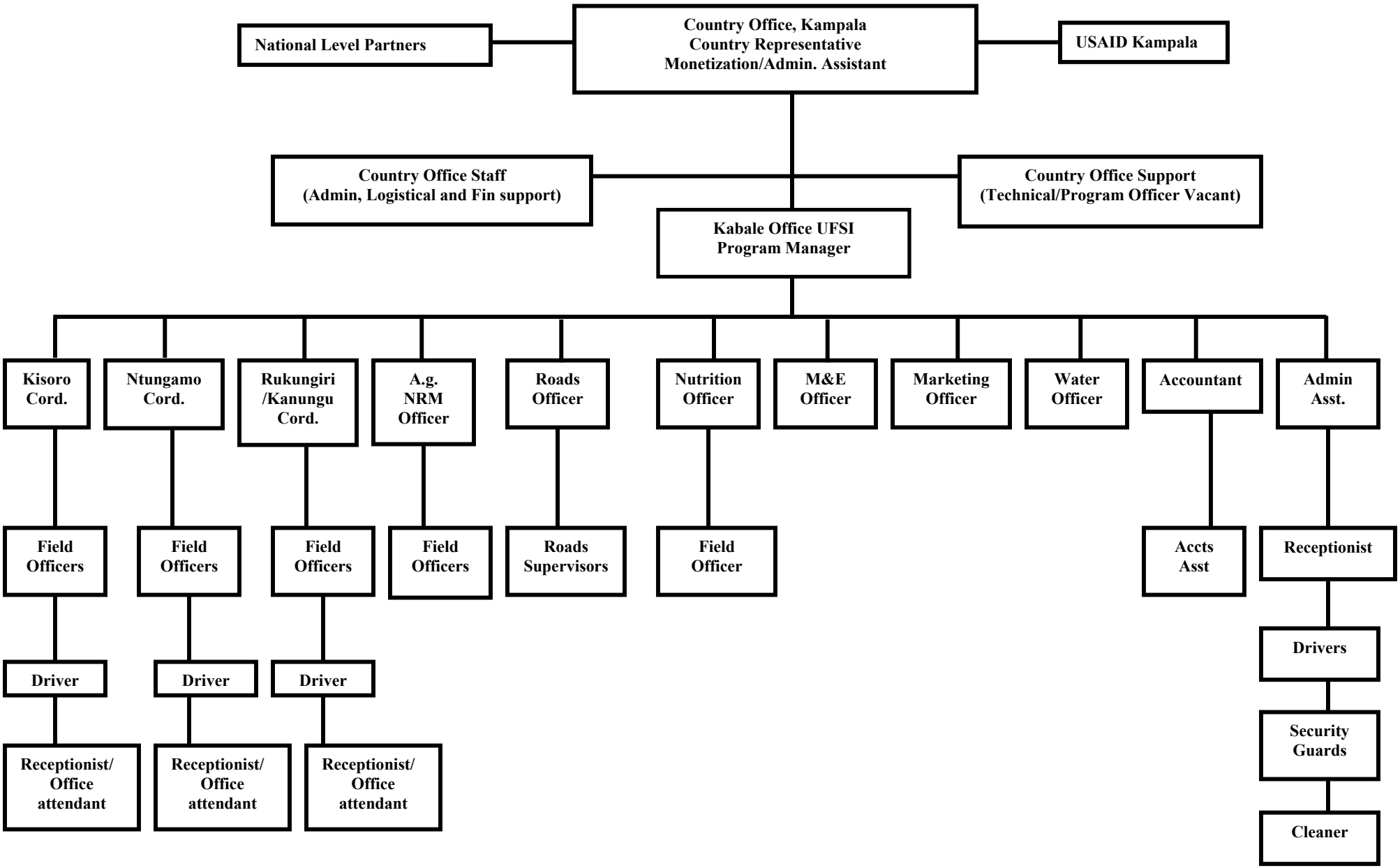


Table 2.1 Deployment of Extension Agents and Their Qualifications

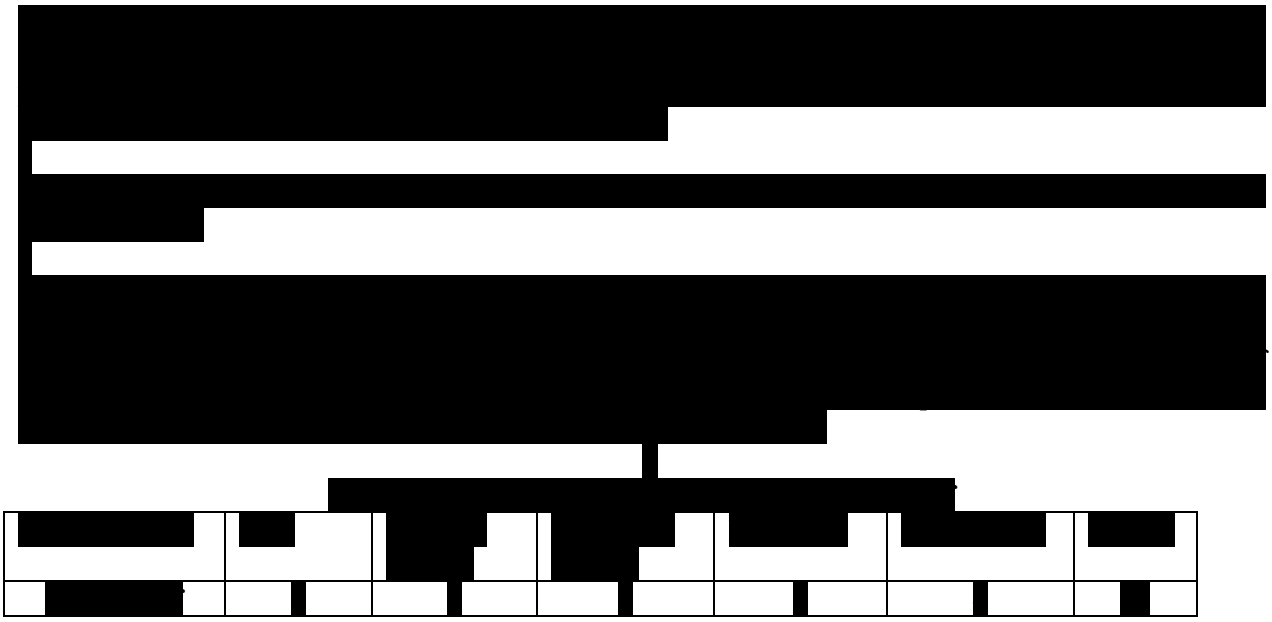
District	No.	Specialty	No. of Farmer Groups	Qualifications
Kabale	3	Agric (1), NRM (2) (1 agric EA & 1 nutrition EA vacant)	36	Diploma (2), Certificate (1)
Ntungamo	2	Agric (1), Nutrition (1). (1 NRM EA vacant)	36	Bachelor's Degree (1), Certificate (1)
Kisoro	2	Agric (1), Nutrition (1) (1 NRM EA vacant)	36	Diploma (1), Certificate in Nursing (1)
Rukungiri/Kanungu	2	Agric (1), Nutrition (1) (1 NRM EA vacant)	35	Diploma (1), Bachelor's Degree (1)

in Rukungiri/Kanungu and 2 in Kisoro (Table 2.2). There are also 3 roads supervisors. There are presently 5 vacant EA positions, and given the short remaining time for the project, the filling of these posts is not planned. The agricultural extension staff in Ntungamo, Kisoro and Rukungiri/Kisoro must also cover the NRM activities, since there are no NRM EAs in these districts, and this was adding considerably to their workload. But, as noted above, given the few months remaining in the project, it is not recommended that these NRM EA posts be filled. Should there be any extension to the NRM component, then the filling of these posts should be seriously considered.

A community facilitator for Farmer Field Schools (FFSs) (with a Master's degree) was recruited March 2005 to train farmers particularly on the treatment of potato blight. These EAs work with the section heads and serve 143 farmer groups. In addition, there are 4 FFS's groups served by the FFS facilitator who works closely with the community mobilizer. On average, each EA serves 35-36 village groups in each district. In some instances, the groups are more than 100 kms. apart within each district. The staff interviewed by the evaluation team were clearly dedicated to their work, but need to travel long distances to do their work effectively. This is especially the case in the new districts.

Earlier in the project, management had rented simple furnished houses in strategic sub-counties to facilitate extension agents when in the field, but the MTE found that these were not being used and recommended they be closed and emphasis placed on improving the mobility of the EAs. All these houses have now been closed and, as also recommended by the MTE, a review of existing motorcycles and vehicles was undertaken to assess whether they are worth maintaining or whether it would be more cost-effective to replace them. Also, as recommended by the MTE, additional motorcycles have been procured to facilitate transport of field staff. The team was pleased to note that the mobility of extension staff has been improved by regular maintenance of the motorcycles and by the purchase of 8 new motorcycles. All extension staff now have well-functioning motorcycles to facilitate their work.

The MTE also noted that there was a need to replace the pick-ups for agriculture and roads, which are among the oldest of the project vehicles. In particular, the vehicle used by the District Coordinator in Rukungiri is not in good condition. New pick-ups have not yet been purchased because of the difficulty of accumulating adequate funds due to the monetization process and its associated cash-flow problem. The team was pleased to note that a request is presently being submitted to USAID to purchase two new pickups.



Assessment of Management: The final evaluation of UFSI-I noted that the project was extremely well managed. Partners and staff appreciated the project's transparency and accountability. This good performance continued during the initial implementation of the second phase of the project. However, by the time of the MTE, the team noted some deterioration in project administration reflecting staffing and remuneration issues. Staff turnover had been high and, in line with Africare's policy of encouraging rotation after two years in assignment, the project coordinator (PC) left in March 2004 (he had been in the assignment almost 5 years). The acting PC had the difficult task of continuing project implementation, now expanded into four new districts, with this high staff turnover.

The evaluation team was impressed by the speedy response of management to this situation. The post of PC was filled quickly by an experienced project manager. Equally impressive has been the filling of some vacant posts by well-qualified staff. New section heads have been recruited to the roads, nutrition, agriculture and NRM sections. In addition, as recommended in the MTE, a new position of marketing specialist has been created and filled. Positions remaining unfilled are M&E assistant, one agricultural EA, one nutrition EA, and three NRM EA that were not filled, as noted above. The NRM positions were not filled due to shortage and subsequent closing of SUNAREM funding. An intern is presently working with the project for one year reviewing and assisting the M&E activities in order to make recommendations to improve the M&E activities in the new MYAP.

Remuneration: The Mid-term Evaluation noted that, compared to other NGOs in the districts, the remuneration of project staff had lost competitiveness and needed to be improved. There had been no cost of living adjustment to salaries since January 2003. Moreover, there was also no salary scale. Discussions with staff indicated that an important reason for the high staff turnover had been the relatively low level of staff compensation. The FE team was pleased to note that there had been a review of other NGO packages, and an across the board increase in salaries of 35% was approved in July 2005. The establishment of a salary scale for all positions to improve transparency, however, has not yet been done. *It is recommended that in future activities, project management review salary scales to ensure harmony within the project team, and also to provide a solid salary scale base.*

2.4 Staff Capacity Building Efforts

The final evaluation of UFSI-I noted that staff training was an extremely important factor contributing to the project's success. It motivated project staff, and helped them maintain their technical knowledge and expertise at a highly proficient level. The MNT strongly encouraged that continued and diverse training be provided during the second project phase. The MTE team noted that, while some training had been provided, particularly for the agricultural and nutrition components, training in other components lagged behind. The MTE recommended a more intensive training effort, and to some extent, this has been done. A list of the training courses in which project staff have participated is provided in Table 2.3. Further details are provided in later chapters.

Table 2.3 Training of Africare/Kabale Staff

Training Beneficiary	Training Recommended in MTE Report	Training Provided and Planned
All Section Heads and M&E Head	ACCESS and Epi-Info; SPSS or STATA MS WORD & EXCEL	Training in Epi-Info provided to M&E head, and planned for other staff during remainder of project. Training on other mentioned programs scheduled for second quarter of FY 06. Other training provided: M&E officer was trained in participatory M&E in collaboration with CIAT.
NRM staff	Training in soil erosion, conservation and watershed management Training of Section Head in ACCESS and SPSS, who would then train other staff.	One staff trained on watershed management Further training not necessary because of staff changes and skills of recently hired staff. Not yet done due to closure of SUNAREM and hence lack of funding.
Roads staff	Maintenance staff should be trained in EIA AUTOCARD installation and training. Roads supervisors need training in labor-based roads' maintenance. Train roads staff and selected community members on road maintenance. Liaise with other consultants and Local Govt. To obtain technical personnel & technologies.	One staff received one day's training in EIA. Others not done due to shortage of funds. Not yet done Not yet done Not yet done Done in Kanungu in collaboration with Local Govt. More training planned in Kisoro and Rukungiri Districts in FY06. Discussions between Sec. Head and COI (Ministry of Works) and with the municipal engineer for Kabale District to develop a Roads Manual for Africare. This may be outsourced to ensure its completion before end of project.

2.5 Training of Farmers

Farmers participating in the project have benefited from training, both locally and at national events. For example, 40 farmers went to the Annual National Agricultural Show in Jinja, 32 participated in an agri-business farmer training workshop, 16 participated in farm enterprise training, 13 undertook training in

horticulture/fruit tree management at AFRENA/ICRAF, and 192 participated in training in growth monitoring and promotion with district health staff and the Ministry of Health from Mulago Hospital.

The UFSI intervention model is based on the concept of reinforcing the technical and administrative capacity of the F**ood Security Committees** (FSC) in villages where Africare intervenes. Women are especially involved in the training; estimates by the project staff place women's participation in the training programs at approximately 80%. Capacity building is a critical element in the project implementation. Currently Africare is focusing on institutional capacity building that will later translate into autonomous activity implementation by farmers in order to achieve sustainability. The role of the FSCs is discussed further in Chapter 3.

An important strength of the project is the close integration of its staff in the varied coordinating agencies operating in the project area. This is evident from Table 2.4, and has facilitated a good integration of activities in the project area.

Table 2. 4 Project Staff Participation in District-level Coordinating Bodies

Category of Committee	Member		Attend meetings (not standing member)	
District Coordination	Adm	Tech	Adm	Tech
District NGO Coordinating Committee (Kabale district)	X			
District Planning Committee—Plan for Modernizing Agriculture (PMA)			X	X
Sector Committees				
Production and Marketing Committee (Kabale District)				X
District Natural Resources Management Forum		X		
Kabale District Technical Services (roads)				X
Sub-County Planning Meetings				
Kaharo				X
Kitumba				X
Bubare				X
Muko				X
Bufundi				X
Rubaya				X
Kamugangaguzi				X
Rwamucucu				X
Maziba				X
Buhara				X
Kashambya				X
Hamurwa				X
Nat"l Steering Committees/Task Forces				
AFRENA (Agroforestry Research Networks for Africa)		X		
African Highlands Initiative		X		
Uganda Agroforestry Dev. Network (UGADEN)			X	
National Agroforestry Network		X		
National Environmental Management Authority (petition filed for membership)		Filed		

Category of Committee	Member		Attend meetings (not standing member)	
Nat'l & International Professional Associations				
Soil Science Society of East Africa		X		
Uganda Institute of Professional Engineers		Filed		
Agriculture Nutrition Advantage Project		X		
Vitamin A for Africa Partnership		X		
Certified Public Accountants Assoc. of Uganda		X		

2.6 Project Financial Management.

The project's system of financial reporting follows seven steps. Following the resignation of the accountant in April 2004, a new accountant was hired and he is working closely with the Administration Officer in the Kampala office to become fully conversant with the project's accounts and procedures. One important problem with the accounting procedures is that it follows a « cost-center » approach only and not by component. As a result, it is difficult to estimate how much has already been spent by component and how much remains. The exception to this was for the NRM component that had its own source of funding through ECOTRUST**.** While it was recognized that Africare may need to modify budgets and their elements at any time, the MTE recommended that more effort be made to maintain and make available to staff up-to-date budgets on a component basis. The FE team was pleased to note that efforts have been made to improve this situation. Work plans are now submitted to the PM for approval. When the cash flow is inadequate, this is communicated to the staff and the proposed activities are discussed and reduced to conform to available funds.

The MTE also recommended that project management have a clear view of the current state of the budget and of the plans for the disbursement of the balance over the remainder of the project. It was recommended that this be discussed in a transparent way with section heads, and made known to all the project staff. The FE team was encouraged to note that is now the regular procedure. Discussion on the plans for the remainder of the project have taken place among staff in a most transparent manner, and the technical staff have prepared a draft of the sustainability strategy and the closeout plan for their respective components. This will soon be compiled as a project sustainability strategy and shared with all staff.

2.6.1 Project Procurement Procedures

The project has followed a standard process of procurement of items requested by the EAs through their section heads. The process is well understood by most agents and section heads. The strength of the system is its simplicity and clarity. The process is as follows:

1. User/user section fills in a requisition and forwards the request to the section head.
2. Section head makes a recommendation on the request and surveys the market for availability and prices.
3. Program manager reviews request and approves/disapproves. If approved, the PM sanctions the acquisition of the invoices.
4. Supplier/vendor is chosen to supply. For large supplies, all sections are involved in the decision.
5. Supplies are received and invoice is presented together with delivery note.
6. Payment is then processed on receipt of goods.

2.6.2 Management of Project Inputs and Equipment.

UFSI operates two major containers that are used to store equipment needed by the field program and two other storage facilities connected with the main office in Kabale. Since 1999, the project has had a strict

system for managing the four storage units and in honoring requests for project goods. This system is shown in Annex II. The same system of store management has been used to manage field storage units and project roads construction equipment. This tight management system has discouraged theft.

2.6.3 Management of Project Disbursements.

The MTE noted that planning and implementation of the project had been seriously hindered by the unpredictability and delays in receipt of agreed project funding. This had been the case with both the monetization proceeds and the ECOTRUST funding. In the first year of the project, for example, it was expected that 2650 MT of hard red winter wheat would be monetized (Table 2.5), providing an amount of $689,000, but only $223,103 was received (Table 2.7). Similarly in year two of the project, the amount received from monetization was only $425,039 compared to an expected and budgeted amount of $689,000. The experience with ECOTRUST funds was similar. The agreement with them was not signed until year two of the project, despite plans to begin the NRM work in year one. As a result, it was extremely unlikely that the balance of the ECOTRUST funds amounting to $360,815 would be disbursed by end of September 2004, in line with the agreement. The MTE team requested an extension, and a 9-month extension was subsequently granted.

Table 2.5 Monetization Proceeds: Expected and Actual Title II Commodity Aid and Project Proceeds

	Year 1 (FY02)* (Jan.2002-Sept. 2002)	Year 2 (FY03) (Oct. 2002-Sept.2003)	Year 3 (FY04) (Oct.2003-Sept.2004)	Year 4 (FY05) (Oct.2004-Sept.2005)	Year 5 (FY06) (Oct.2005-Sept.2006)	TOTAL (Jan.2002-Sept.2006)
Hard Red Winter Wheat Requested (MT)	2,650	2,650	2,650	2,810	2,490	13,250
Hard Red Winter Wheat Received (MT)	2,650	2,650	2,650	2,650	1,570	12,170
Expected Proceeds ($)	689,000	689,000	689,000	730,572	647,428	3,445,000
Actual Proceeds ($)	223,103	464,800	886,999	1,229,851	462,800	**3,267,553**

*FY refers to the FY in USAID recording system.

FFD reduced the tonnage for Year 5 (FY06) to 1,570 MT. The originally approved commodity level for FY06 was 2,490 MT. However, when working on the FY06 Resource Request, Africare/Washington reduced the tonnage so that the balance at the end of project would be zero. Due to the monetization cycle, the sales receipts in Year 5 were received later than projected during the life of the project. As a result, a substantial amount of money was received late in the life of the project, and overall, the project will receive $211,167 less than approved.

In order for the budget to be fully expended by end of project, the tonnage was reduced. Additionally, some project equipment was not purchased. It was not possible to purchase 5 pickups and several motorcycles, as recommended in the MTE. In addition, needed office equipment was not purchased.

There has also been a delay in obtaining funding for Year 4 (FY05) budget (the project is still receiving Year 4 funds). The last installment of Year 5 (FY06) funds is in March/April 2006, i.e. 6 months late.

Simply put, the rhythm of the monetization cycle did not fit the resource demand of the project. Monetization commodities have arrived and continue to arrive later than the needs of the project.

Table 2.6 UFSI II Funds Approved and Received

PERIOD	Funds Approved in the DAP	Total Monetization Funds Received	Total Ecotrust Funds Received
Y1 (Jan. 02-Sept. 02)	$689,000	$223,103	$0
Y2 (Oct. 02-Sept. 03)	$689,000	$464,800	$422,454
Y3 (Oct. 03-Jun. 04)	$689,000	$886,999	$325,000
(Jul. 04-Sept.04)			$360,815 *
Y4 & Y5 (Oct. 04-Sept. 06)	$1,379,000	$886,719	$0
Total LOA	**$3,446,000**	**$2,464,621**	**$1,108,269**

* $83,000 was received August 10, 2004; $67,000 was received Nov. 10, 2004; and $210,815 was received Dec. 18th 2004.

As can be seen from Tables 2.5 and 2.6, the project planned for equal sales of wheat (2650 MT) in each of the first three fiscal years. In retrospect, it would have been advisable to « front-load » the project funding, with larger volumes of sales in the early years. This would have allowed for a more rapid start-up of the project.

It is recommended that in any future UFSI activity, that the funding be front-loaded to allow for a more rapid project start-up. It is recognized that USAID prefers to designate a lead monetization organization within a group of Cooperating Sponsors (CSs) who are all implementing food security projects in a given country. In the Uganda/Africare program, the monetization role has been given to ACDI-VOCA. In addition, USAID prefers to receive DAPs and fund all CSs on the same cycle. Typically, CSs have the same heavy start-up needs and costs making it difficult for the monetization agent to front-load the budget of any one CS over the budgets of others. The team recommends that USAID consider staggering the start-up of projects to enable the lead monetization agent to front-load those who need it.

2.6.4 Funding Over the Remainder of the Project. The DAP approved budget for the life of project was $3,445,000 for monetization. As of December 31, 2004, there was a balance of $819,523 from monetization. In January 2005 the Annual Estimated Requirement (AER) for FY06 was reduced by Africare from 2,490 MT (in the DAP) to 1,570 MT of wheat to be monetized. This was done, apparently, in the expectation that the balance of $819,523 could not be effectively utilized by the project before closure end-September 2006. In FY05 the funds the project expected from monetization was $871,100 (after selling 2810 MT of wheat). In fact, the actual for FY05 (up to Jan. 25, 2006) was only $475,861, and a balance of $395,239 is expected by end-April 2006. It is important to note that these are funds that should have been received by the end of FY05, i.e. end Sept. 2005.

The funds for FY06 could then be expected. These would be from the sale of 570 MT of wheat that had been approved, which, at the call forward price of $310 per MT, amounts to $486,700. Hence the expected remaining balance for the project until closure is $486,700 plus $395,239, amounting to

$881,939[8]. Of this amount, an estimated $175,823 will be for overheads and the balance of $706,116 would finance direct project costs. No funds are likely to be available for any discretionary expenses.

2.7 The Monitoring and Evaluation System

The Monitoring and Evaluation (M&E) system collects, tabulates and reports on progress in implementing the project. The system also evaluates the impact of the project and the changes that have occurred as a result of the project initiatives. Performance is assessed by achievement in activities in the four components and summarized in the Indicator Performance Tracking Table (IPTT). The extension agents are responsible for assembling the data, and the section heads interpret and report findings. Data collection techniques used include data collection forms, yield sampling, and questionnaires in periodic surveys (annually and semi-annually). Project staff, the FSC and other implementing partners track, interpret and report upon the timing, quality and magnitude of outcomes generated by use of project inputs as well as the impact of external factors.

A key element of the project is that the local population are actively involved in the monitoring and evaluation, especially the beneficiaries and field level-staff. Data collection, analysis and communication of field findings are done in close consultation with farmers. Adoption rates have been found to be higher and faster when this M&E is done with the beneficiaries because they become more aware of the different interventions and strategies for improving their productivity and development.

The M&E system obtains information to improve project planning and implementation in a timely and effective way. The system communicates the way resources/project inputs are used and whether the intended beneficiaries use them and use them effectively. The system enables project evaluation and allows for problem identification and solving. The project has harmonized its M&E system by working closely with USAID/Uganda mission and other Cooperating Sponsors (CSs) to ensure consistency of activities, results, impact and monitoring indicators, and objectives with those of the Mission and FFP/W.

The M&E plan has performance indicators derived from USAID Mission ISP, other Cooperating Sponsors (CS) in Uganda, and those developed by Africare for food security programs in other African countries. The principal responsibility for assembling, interpreting and reporting monitoring data rests with the project staff based in field stations in the districts of Kabale, Kisoro, Ntungamo and Rukungiri but the process used is highly participatory, involving the direct beneficiaries of the project. Project staff, Food Security Committees and other direct beneficiaries, and other implementing partners undertake the following, as detailed in the DIP:

1. Track, interpret and report on the timing, quality and magnitude of outcomes generated by use of UFSI inputs as well as the impact of external factors and unanticipated constraints.
2. Provide and ensure transparency and accountability on the use of activity resources.

The Final Evaluation team noted that the M&E system has worked well. The data are collected and analyzed in a timely way, the farmer beneficiaries are clearly involved in the process, and most field staff

[8] Note: the difference between the balance of $819,523 and $881,939 was due to the change in sale price of wheat/MT/year.

and section heads have a good level of understanding of the system. It does, however, appear that some field staff would benefit from a better awareness of the IPTT indicators and also from training in data collection techniques and analysis. It is recommended that future activities give field staff more intensive training on the importance of the IPTT indicators and also on data collection techniques such as random sampling, and triangulation.

Chapter 3: Agricultural Production, Post-Harvest Handling and Marketing

3.1 Problem Context

3.1.1 National context of the problem

Per capita food production in Uganda has declined significantly since the 1970s. The country's self-sufficiency in food production is threatened, putting the country at the risk of food insecurity. Moreover, poverty remains severe, especially in rural areas (Appleton, 2001), and the problems of low productivity and land degration are worsening, causing declining yields for most food crops. By reducing crop yields and income, land degradation fuels further impoverishment and food insecurity, thus completing a vicious cycle of land degradation-declining productivity-poverty and further land degradation.

3.1.2 Regional context of the problem

The problems of land degradation, poverty, food insecurity and malnutrition are particularly evident in the southwestern region. Soil surveys conducted in 2000 in 32 districts of Uganda show that the average annual depletion rates (net of inputs) of soil macronutrients range from 43 kg of nitrogen (N), 5 kg of phosphorous (P) and 31 kg of potassium (K) per ha per year in sparsely populated and relatively flat districts of northern Uganda (such as Gulu) to 279 kg of N, 162 kg of P, and 134 kg of K per ha in the densely populated and mountainous districts of Kabale and Kisoro in southwestern Uganda (Ssali et al., 2005). The main farm nutrient flows are through erosion losses (32% of N, 85% of P and 35% of K outflows), crop harvest sales (28% for N, 14% for P and 65% for K) and leaching for N (30%).

The major challenge for the Government and its development partners is to identify strategies to effectively address these problems in a sustainable and equitable way. A key strategy in the Government's Poverty Eradication Action Plan (PEAP)[9] is the Plan for Modernization of Agriculture (PMA) (MAAIF and MFPED 2000). The PMA seeks to eradicate poverty by transforming subsistence agriculture into commercially oriented farming. Key priorities of the PMA include increasing the role of the private sector in all commercial agricultural activities (including commodity processing and marketing, input supply and provision of rural finance), improving research-extension-farmer linkages, and continuing to fund agricultural research and technical assistance programs to support the development, dissemination and adoption of high-yielding, labor-saving technologies to increase total factor productivity and farm income (ibid.)

These efforts are well complemented by the agriculture and post-harvest marketing interventions of UFSI-II. Following the highly successful phase one of the UFSI project in one district (Kabale), Africare developed a regional food security program—UFSI-II—with the goal of improving food security in the five southwestern districts of Kabale, Kisoro, Kanungu, Rukungiri and Ntungamo. The objective of the agricultural component of UFSI-II is to increase agricultural production and productivity through increased volume, quality and variety of foods produced and made available for household food consumption and sale, as well as improvement in post-harvest handling/storage, value-added processing and marketing. Household food security and income would be increased through the following interventions:

[9] Described in Chapter 1, Section1.2.

1. Introduction and dissemination of improved inputs and technologies for food and cash crop production (including improved seeds and agricultural technical packages) for various crops (e.g., Solanum potatoes, sweet potatoes, bananas, and climbing beans).

2. Introduction and dissemination of improved technologies for post harvest handling such as drying, storage, and value-addition, and

3. Provision of market information and strengthening farmers groups through training in marketing and management of small-scale farm businesses, as well as linking farmers to potential buyers.

To ensure the sustainability of UFSI-II achievements, Africare also undertook to strengthen the capacity of farmer groups and local (sub-county) governments in the project area to prioritize, plan, budget, implement and evaluate food security activities to meet their needs.

The UFSI project was funded by USAID, and during its implementation, Africare together with its partners received funding for three small but related projects on agriculture, namely, (1) the Farmer Field School (FFS) for control of Bean Root Rot (BRR) disease; (2) the Integration and Scaling Up Technologies for Resource-Poor Potato Growers; (3) and the Enabling Rural Innovations (ERI) project[10]/BAPPA.

Project I: Farmer Field School (FFS) for control of Bean Root Rot (BRR) disease. The National Agricultural Research Organization (NARO) and Maendeleo Agricultural Trust Fund funded this project (US$ 14,171). It was implemented in Kisoro from April 2003 to April 2005, and aimed to improve food security and income of the people in Kisoro district through restoring bean production by using bean varieties resistant to root rot coupled with using integrated methods for controling BRR. Africare implemented the project in partnership with the national bean program based at Namulonge Agricultural and Animal Research Institute (NAARI) and Kachwekano Agriculture and Development Centre (ARDC), using the FFS approach to research and development. Africare was responsible for day-to-day running of the FFS, for developing a syllabus in collaboration with national program scientists, and for supervising the multiplication and management of bean plots at the farm level and reporting on the project's progress.

Project II: Integration and Scaling-Up Technologies for Resource-Poor Potato Growers. This project (US$390,000) is funded by the International Fund for Agricultural Development (IFAD) through the International Potato Center (CIP) Technical Assistance Grant (TAG) 652. It is implemented in four countries (Uganda, Ethiopia, Bolivia, and Peru), and in Uganda, the project is located in Kabale. Implementation started in June 2004 and ends in March 2007.

The goal of this project is to improve competitiveness and food security of resource-poor potato growers through sustainable technologies developed and disseminated by appropriate methodologies. Project implementation is on-farm and involves participatory research and technology dissemination through FFS. Africare implements the project in partnership with the NARO-Kachwekano ARDC. Africare also partners with NAADS and AAMP on this project, and these provide the extension staffs who work with the farmers. The role of Africare is to implement activities that involve facilitation and management of day-to-day activities at the farm level in collaboration with NARO-Kachwekano. The activities implemented address Integrated Disease Management (IDM) on potato-using farmer research groups.

In integrating and scaling up technologies for resource-poor potato growers in Kabale district, the project seeks to improve farmers' competitiveness in the market, household food security, and production techniques to sustainably improve the quality and quantity of food, and subsequently, reduce poverty levels among the farmers.

Project III: Enabling Rural Innovations (ERI) –(BAPPA-2). This project (US$ 90,000) started in October 2003 in three sub-counties of Kabale and ends in October 2006. It is funded by the Swiss

[10] BAPPA stands for Beyond Productivity to Poverty Alleviation. The current name for this project is ERI.

Development Corporation (SDC) and the Canadian International Development Corporation (CIDA) through the Centro Internacional de Agricultura Tropica (CIAT). The objectives are to improve organizational capacity in pilot communities; support farmers' experimentation and application of technical skills; develop an approach to strengthen the community's capacity to invest in poverty-reducing enterprises; assist farming communities to protect their natural resources; and support women's empowerment and participation in leadership at the community level.

Africare implements the project and facilitates CIAT scientists in conducting collaborative research and development activities. During implementation, Africare empowers women economically and socially, improves sustainable use of communities' resources, and trains farmers that graduate from the UFSI project's FFS and from other participating communities in marketing skills as well as linking them to markets.

These three projects complement well the objectives of the agricultural component of UFSI-II.

3.2 Partners

Key to the success of Africare's interventions is its strategy and ability to utilize partnerships and synergies to achieve its objectives through a collective effort rather than working alone. Besides being more efficient and cost-effective, working in partnership with other organizations contributes to the sustainability of UFSI-II project interventions because the partners can continue with the interventions when the UFSI project closes. Since the start of UFSI-II, Africare has worked in partnership with many organizations. Table 3.1 below summarizes the nature and roles of most significant of these partners.

Some of the partnerships listed in Table 3.1 were operational before the MTE and ceased after serving their intended purpose. For example, Agro-genetic laboratories LTD and CABI international collaborated with Africare at a contract (MOU) level before the MTE, but these contracts ended when the companies involved completed their respective tasks of improving and providing clean banana planting materials, and undertaking studies on plant population density to achieve optimum seed size. Among the informal partnerships, Africare maintained active collaboration with NAADS, AAMP, UNSPPA and KPSPC after the MTE. Africare's collaboration with the rest ceased or weakened after achieving the objectives of the partnerships.

Africare's efforts to link farmers to markets are in line with a key strategy of the PMA, which is to promote household food security through the market, rather than through household self-sufficiency, and to encourage households to specialize according to their comparative advantage and acquire what they don't produce through the market. In its efforts to link farmers to markets, Africare sought collaborative arrangements with CIAT because of its expertise in participatory market research methodologies Africare and CIAT share a common objective of enhancing food security and rural livelihoods for the poor while protecting the environment. Under the *Enabling Rural Innovations* (ERI) Project, CIAT develops technologies (such as optimum fertilizer use rates, spacing and de-haulming time for Solanum potatoes) through participatory research, which are then promoted by Africare among farmers in the project area..

CIAT also provides training for Africare staff, helps to mobilize resources to facilitate farmer group activities and provide technical backstopping in the efforts to link farmers to markets. Africare does the monitoring and evaluation, and the scaling up of the developed technologies to new communities. Africare also identifies and supports the development farmers' groups to work with the CIAT-Africare partnership, in addition to contributing staff time and funds to meet the cost of demonstration materials.

Table 3.1 Major Partners of the Agriculture Section of UFSI-II.

Name of Partner	Type of Partnership	Collaborative Activities
CIAT	M.O.U	-Implementing a joint ERI project (addressing socio-economic issues and how they affect marketing and social well-being, as well as linking farmers to markets) -Capacity building for Africare staff in participatory market research methodologies and Agro-enterprise development
CIP	M.O.U	-Implementation of FFS emphasizing integrated disease management of late blight and bacterial wilt -Germplasm exchange -Provision of training materials -Technical backstopping on Solanum and sweet potatoes
NARO	M.O.U	-On-farm research activities -Seed certification -Post-harvest storage conservation -Training (technical backstopping) -Foundation seed supply -Joint monitoring (yields and diseases) -Joint implementation of farmer field schools (FFS) -Joint experimentation to achieve size and quality of produce that meets potential buyers' requirements
District Local Governments	M.O.U	-Joint training of farmers
NAADS and AAMP	Informal	-Training of farmers -Provision of seed, other inputs and services to farmers -Exchange visits between Africare farmers and NAADS/ AAMP farmers -Linking farmers' groups to potential buyers -Collecting & dissemination of market information
UNSPPA	Informal	-Joint training in seed production technology -Developing distribution networks of improved seed - Marketing activities -Seed certification
Kigezi Private Sector Promotion Center	Informal	-Training farmers in agribusiness skills
PRAPACE	Informal	-Regional networking (Sub Saharan Africa-Sweet potato and Irish potato) -Training of staff and facilitating of exchange visits -Germplasm exchange
Kabale District Farmers' Ass. (KADFA	Informal	-Facilitating Exchange Visits -CEED (NAADS action research)
Care international	Informal	-Joint Training -CEED (NAADS action research)
Africa 2000 Network	Informal	-Exchange visits -Exchange of reports -CEED (NAADS action research)
Africa Highlands Initiative (AHI)	Informal	-Developing communication materials -Facilitating exchange visits -CEED (NAADS action research) -Joint workshops to share experience on watershed management

Source: Africare reports and personal communication with partners.

In collaboration with CIAT, Africare develops the capacity of smallholders to penetrate competitive market chains using participatory market research methodologies. The process involves assisting farmers' groups to diagnose, prioritize, plan, and evaluate income-generating activities (enterprises) in a participatory manner; and to conduct market research to identify potential markets for their enterprises. Meetings between potential buyers and farmers' group representatives are then arranged to discuss quantity, quality, prices, packaging and frequency of delivery, and if successful, contracts are signed and production begins. As a result of CIAT-Africare collaborative effort, one of the Africare-supported groups (Nyabyumba United Farmers' Group) signed a contract with Nandos (a fast food restaurant in Kampala) in July 2003 to supply 11.28 MT of potatoes per month (see Box 3.1). CIAT and Africare are currently finalizing the process of linking farmers groups in Nyabyumba and Nyakibande to a potato crisp processing factory in Kampala, with a capacity of 2.4 MT of potatoes per week. Other efforts by Africare to link farmers to markets are discussed later in this chapter in the section on marketing activities.

NARO is also a strong partner of Africare and has been instrumental in producing start-up seed and planting materials for different interventions (such as Solanum potatoes, climbing beans, maize, cassava and sweet potatoes) undertaken by Africare. Besides conducting research and developing new technologies for use by Africare farmers, NARO also trains these farmers as well as Africare staff. Through training, NARO gives technical backstopping to Africare to ensure that the technologies promoted are handled well. For example, under the ERI project which links farmers to markets, NARO and Africare have conducted on-farm participatory research to establish the optimum fertilizer rate, de-haulming time (time to cut off shoots to enable potatoes to attain desired size) and plant spacing required to produce the right size and quality of potatoes needed by potential buyers.

In addition, NARO is collaborating with Africare to develop and multiply a potato variety with good qualities for processing crisps, and has facilitated Africare to control the bean root rot disease in Kisoro by mobilizing funds to run Farmer Field Schools (FFS). The main contribution of Africare to this partnership is supporting the development of farmers' groups that NARO can work with and the identification of farmers' needs (in a participatory manner). Africare also provides staff time and funds to help meet the cost of demonstration materials.

NARO is also managing a collaborative research program with the International Potato Center (CIP) and Africare on farmer field schools (FFS), using funding from the International Fund for Agricultural Development (IFAD). Through CIP, IFAD is funding a project (US$ 390,000) *on Integrating and scaling up technologies for resource poor potato grower*. This project runs from June 2004 to March 2007 and is being implemented in four Africare facilitated villages namely; Habubare, Ryakarimira, Nyakibande, and Kabanyonyi communities. Implementation of this project is involves participatory research and technology dissemination through FFS, with the aim of improving competitiveness (on the market) and food security (in homes) of resource use.

A key result of this partnership between Africare, NARO and CIP is the demonstration and promotion of fertilizer and integrated disease and pest management options among Africare farmers. This wouldn't be possible if Africare was working alone because the organization (USAID) funding UFSI-II does not allow using its funds to purchase inorganic fertilizers[11]. The demonstration and promotion of fertilizer has been beneficial in Kabale particularly on Solanum potatoes, saving farmers the burden of having to apply tons of organic manure (compost) to increase yield when they can apply a few kilograms of NPK and get the same or even better results.

UFSI-II supports the development of community based commercial seed growers. Africare selects and trains farmers (usually through FFS) and recommends them to Uganda National Seed Potato Producers

[11] However, Africare received some inorganic fertilizer training information from the USAID Mission to Uganda in FY 05 which was used to train some communities in the safe use of inorganic fertilizers, and will continue in the FY 06

Association (UNSPPA) for enrollment as commercial seed growers, and the majority of UNSPPA's members are graduates of Africare's FFS. UNSPPA absorbs some of the graduates from the Africare FFS who take up potato growing as an enterprise. Africare and its partners also support UNSPPA in terms of capacity building, inspection of seed gardens and linking its members to potential markets for their produce. In return, UNSPPA produces quality disease free seed for use by Africare farmers. It also collaborates with Africare and NARO in inspecting farmers' potato gardens and certifying those that are disease-free for supplying seed for next season's planting.

Other Africare collaborators include Kigezi Private Sector Promotion Center (KPSPC) and local governments in the project area. KPSPC trains Africare farmers in business skills and enterprise development. Several farmers groups have been trained by KPSPC in Apiary management.

UFSI-II also partners with local government from the parish up to district level and at all levels, both the politicians and technical staff are involved in UFSI-II activities. At the lowest level, the Local Council One (LC1) chairman sits as an ex-official member on the Food Security Committee and is directly involved in mobilization of the communities to undertake tasks of the agricultural related activities. At district level, the politicians are involved in policy making and mobilization of farmers in UFSI-II project areas, while the technical staffs under the production directorate conduct agricultural training in the communities together with Africare staff. This helps the scaling up of interventions as well as the rate of adoption of the disseminated technologies. The project also partners with NAADS and AAMP who train and provide quality seed and other inputs to Africare farmers' groups.

3.3 Evolution of the Project's Activities

At the time of inception of UFSI-I, the major constraint identified by farmers was the lack of high quality planting materials to increase production. At that time, planting materials were obtained from the market or farmers' own seed saved from the previous harvest, but these were of poor quality with low genetic potential. Because of limited resources, local governments and institutions did not make any significant effort to help farmers' access good quality planting materials. Thus, the agricultural component of the project undertook to address this problem by providing farmers with improved crop varieties and training them in appropriate cultivating and post-harvest techniques.

According to the 1997 baseline survey and the PRA processes, farmers placed high priority on Solanum potato, sorghum and beans. Sorghum was not included in the project design because of the lack of high quality seed, long maturity periods and being a major source of local alcohol. Priority was given to Solanum potato, followed by climbing beans and sweet potato production. The project developed a strong partnership with the NARO, which helped in the technology selection of the most preferred crops, i.e., climbing beans and Solanum potatoes.

By the fourth year of UFSI-I, the agricultural component had achieved or over-achieved nearly all its original objectives, i.e., to increase crop yields and reduce post-harvest loss of seed and food in storage. A clear indication of this success was the multiplicity of partnership arrangements and collaborative research outputs handled. UFSI-II built on these successes to expand efforts to improve food security beyond Kabale district to the entire southwestern region. The agricultural component of UFSI-II focuses on better agricultural extension and education, strengthening the organizational capacity of community, and improving the market access and promotion of non-farm activities.

The baseline survey conducted in 2002 in the target districts of UFSI-II identified sorghum, beans, and Solanum potatoes as the most important cash crops for farmers, followed by bananas, pineapples, sweet potatoes and maize in that order. Thus, the activities of UFSI-II continued to support the priority crops of UFSI-I (climbing beans, Solanum potatoes and sweet potatoes) and added bananas—an important crop in the new districts of Ntungamo and Rukungiri. Sorghum was omitted for the reasons stated above.

3.3.1 Intervention Identification Process

The agricultural component of UFSI was implemented at the village level in both phase 1 and 2. The project extension agents involved farmers from the selected villages in problem identification, planning and prioritization of problems as well as analyzing existing opportunities. Village action plans (VAPs) were then developed (see Figure 3.1and Box 3.1). These formed the basis for implementing the component's activities.

Africare's entry to the communities has been guided and facilitated by the area sub-county and parish chiefs – thus involving the sub-counties in the planning and subsequent implementation processes. The extension agents helped to set up village production (food security) committees. The production committee includes the chairperson, vice chairperson, treasurer, secretary, security officer/store person, a woman representative, two members and an LCI chairperson. The monitoring and evaluation system targets were set based on the baseline information in target communities and the time frame for the project. It was anticipated that collaborative arrangements and partnerships would help achieve some of the set targets. For the agricultural component, more indicators than those monitored in UFSI-I were added to capture income change and enterprise development.

Figure 3.1 – Village Action Plan of Entekateka

3.3.2 Interventions and Activities under UFSI-I

A total of 5,133 households were supported by the agricultural component in target villages and groups. Activities included village action planning, training and supervision of farmers on recommended crop agronomic practices (Solanum and sweet potatoes and climbing beans), construction of light diffuse stores, training on grain post harvest technologies, development of commercial seed growers, on-farm trials, FFS for integrated disease management, study tours and training of farmers in marketing, small scale farm business management, basic accounting and record keeping. All activity targets were met except in marketing. Project activities were well integrated and complemented each other.

Box 3.1: The Process of Village Action Planning

Each farming community develops its own village action plan (VAP) through participatory methods involving farmers and extension staff of Africare and its partners. The process ensures that the plans are developed according to priorities of the target community, and within the available resources of the farmers, Africare and its partners. During the planning meetings, problems constraining increased agricultural production are identified and ranked. Africare then selects those that fit in the project design (DAP), and Africare's partners select what they can address within their means. In some cases, where Africare and its partners lack the mandate, new collaborators are sought. The farmers, facilitated by Africare, conclude the process with the drafting of an action plan. The plan contains the identified problems, nature of intervention, desired change, activities to be conducted, the responsible party, and time frame within which to attain the desired changes.

3.3.3 Interventions and Activities under UFSI-II

The agricultural activities of UFSI-II concentrated on agriculture extension and education, organizational capacity of community, improving access to the market and promotion of non-farm activities (UFSI-II DAP). Under UFSI-II, agricultural interventions continued in 40 of UFSI-I communities that had been included towards the end of UFSI-I to consolidate the gains achieved.

Agricultural interventions began in 36 new villages and thus remained active in 40 UFSI-I villages in 2002. This is because, while the groups formed first were found to have successfully adopted the new practices, those formed towards end of UFSI-I lacked both understanding of issues and adoption of practices, thus requiring additional support (UFSI-I, Final Evaluation Report, 2001). Interventions expanded to 36 villages in early 2003 and phased out of the 35 UFSI-I villages in Kabale District. Five sites were maintained as case studies for the production to consumption continuum activities in a collaborative arrangement with CIAT. Early in 2004, another 36 villages were added bringing the total number of villages to 113.

The selection procedure of beneficiaries started with parishes, based on severity of food shortage in the past as perceived by the district administration and backed by secondary information, proximity to planned UFSI community roads and willingness of the farmers to be included. Absence of other development NGOs doing similar activities was also considered. Villages within those parishes were then randomly selected and willing farmers from those villages began participating. Early in 2005, 36 more villages were taken up, and another 4 villages were taken up as experimental sites for the FFS in mid-2005. Thus, the agricultural interventions are currently being implemented in 153 villages throughout the five districts. Table 3.2 shows the progress of the agricultural component of UFSI-II at the end of 2005.

Training and supervision of improved agricultural technologies and practices

Farmer training by Africare's extension staff has been mostly on improved agronomic practices, integrated disease and pest management and post-harvest handling. The technologies and practices disseminated to farmers Africare's extension staff are summarized in Table 3.3.

Table 3.2 Implementation Schedule for the Project Activities for Agriculture Component from FY02-FY05

Nature of target/ activity	2002				2003				2004				2005				Remark
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
1 Village action planning	x				x				x				x				143 village action plans developed
2. Train and supervise on recommended crop agronomic practices (potato, sweet potato, banana, & beans)		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
3. Developing New partnerships			x				x			x					x		Six M.O.Us signed
4.Construction of diffuse light stores					x	x	x	x	x	x	x	x	x	x	x	x	
5. Training on grain post harvest technologies			x	x	x	x	x	x	x	x	x	x	x	x	x	x	
6.Development of community based commercial seed growers					x	x	x		x	x	x	x	x	x	x	x	Selected from graduates of FFS
7. On farm trials			x	x		x	x	x		x	x		x	x			Partnered with NARO
8. Farmer field schools for integrated disease management		x	x	x	x	x				x		x	x	x	x	x	Using farmer run field schools
9. Study tours/ exchange visits						x						x	x				
10. Training of farmers in marketing, small-scale farm business management, basic accounting and record keeping						x	x	x	x	x	x	x	x	x	x	x	Linking farmers to markets in partnership with CIAT

Table 3.3 Major Agricultural Technologies Disseminated by Africare's Extension Staff

Crop	Technologies and practices disseminated
Solanum potato	• Suitable land identification • Selection of clean seed and timely planting • Appropriate spacing and line planting • Manure application, weeding, and earthing-up • Integ rated disease management (IDM) of Late blight and Bacterial wilt • De-haulming and harvesting time • Sorting and grading of potato • Packaging and post harvest handling
Banana	• Identification of disease free suckers • Spacing, weeding, mulching and composting manure • Trench construction for soil and water conservation • De-suckering and de-leafing • IPM of banana pests (weevils and nematodes) and IDM of bacterial and Fusarium wilts
Legumes and cereals (beans, peanuts, soybeans, and maize)	• Land identification, plant spacing, weeding, and intercropping/ crop rotation • Staking for climbing beans • Selection of clean seed and timely planting • Manure/fertilizer application • Disease and pests management • Time of harvesting and seed sorting • Post harvest handling

Sweet potatoes and cassava	• Identification of disease free planting materials • Timely planting, appropriate spacing, and weeding • Crops for intercropping/crop rotation

The agricultural section of UFSI-II uses various approaches to train farmers. These include farmer field schools, demonstration gardens, leaflets and video messages, and farmer exchange visits.

(a) Farmer Field Schools (FFS)

The FFS concept rests on the assumption that conventional extension methods do not provide farmers with adequate information to enable them to make decisions on crop and pest management, which deters adoption. But through weekly sessions of self-teaching under FFS, farmers have the opportunity to recognize the factors that affect their crops. The purpose of these FFS is to train farmers in integrated pest or disease management so that they can select the most appropriate components of management, adjust them to their conditions and use these to increase productivity. Interested farmers in a parish or sub-county come together once a week for three hours to attend FFS sessions.

This approach provides a conducive environment for farmers to learn through participatory research, experimentation, adoption and dissemination of appropriate technologies. The approach emphasizes hands-on experience over an agricultural calendar year and covering a curriculum from land preparation to marketing. This helps farmers to learn by doing and discover on their own rather than being told what to do.

As part of UFSI-I activities, Africare conducted a baseline survey in 1997 which revealed that late blight (LB) caused *by phytophthora infestans* was the most devastating constraint for potato improvement in southwestern Uganda, causing crop losses of between 29% and 65% in Kabale highlands. In collaboration with NARO and CIP, Africare started farmer field schools (FFS) as a way of controlling this disease using an integrated approach[12]. In the FFS, farmers receive training on the use of several control methods at the same time, including disease resistance, fungicide use, seed health, cost-benefit analysis and agronomic practices for Solanum potatoes.

By the end of UFSI-I, 16 FFSs (8 facilitated by NARO and 8 by Africare) were in place and the final evaluation for UFSI-I found them very popular among farmers and an extremely effective training method. The Nyabyumba United Farmers' Group graduated from farmer-run FFS and has been supplying potatoes to the fast-food Kampala restaurant, Nandos since 2003. Building on this success, the agricultural component of UFSI-II encouraged the best performing graduates of the first 16 FFSs to start FFSs in neighboring communities, which produced 10 farmer-run FFSs in UFSI-II.

The FFS approach has been used in Kisoro district (in partnership with NARO scientists) to fight the bean root rot disease, and at the mid-term of UFSI-II, 3 FFS had been set up and 81 participants had graduated. Another 3 FFS were started after the MTE to bring the total number of FFS in the district to 6 in a two-year period, 3 of which were run by an Africare-employed facilitator, and the other 3 by a community-based facilitator. After testing one local and seven improved varieties of beans with varying levels of susceptibility, the farmers adopted NABE 12C, popularly called Sugar-31.

At the mid-term, a new MoU had just been signed between Africare, CIP and NARO to build on the FFS success and add a component on the agricultural knowledge and information system for Solanum potato (AKIS Potato). It was planned that the agricultural component of UFSI-II would work closely with NAADS and Area Based Agricultural Modernization Project (AAMP) to undertake this study in

[12] The two main objectives of this Integrated Disease Management and Late Blight (IDM-LB) program were to use resistant varieties and train farmers in LB management and other aspects of the Solanum potato crop.

September 2004 to implement the AKIS concept. This is being implemented by NAADS and AAMP, and is running for the second season.

In March 2005, Africare recruited a specialist in FFS to provide leadership and guidance in running FFS, and this is expected to improve their performance. It is hoped that the graduates of the FFS will be hired by other organizations such as NAADS to offer extension/training services to the communities. In one of the Africare farmer-run FFS, the facilitator is a graduate of Africare FFS of UFSI-I. Other graduates are expected to become commercial producers of potatoes and beans, as has previously been the case.

(b) Demonstrations

Community seed multiplication schemes are used as demonstration plots. The communities are provided with improved seed that include *Solanum* potato, beans, banana suckers, sweet potato vines, composite maize, cassava cuttings, peanuts, and soybeans. The seed is procured from NARO centers. However, for the vegetatively- propagated crops of sweet potatoes and cassava, materials for distribution to new villages are bought from old villages that got the initial seed from NARO. This speeds up the rate of adoption of the varieties. In FY05 alone, 659 community multiplication gardens were established (Table 3.4).

Table 3.4. Community Gardens of Key Intervention Crops Established During FY05 Season

Crop	Number of Community Gardens
Potato	144
Beans	144
Maize	120
Orange fleshed sweet potatoes	144
Banana	75
Cassava	37
Peanuts	27
Total	**659**

Under the demonstration training approach, communities multiply the provided seed for two seasons. In the third season, the individual farmers take up the seed and plant at the household level. It was discovered that at individual level, the Africare farmers exchange their seed with non-Africare farmers. While this may have a negative effect on the level of adoption of the Africare-promoted improved varieties in the targeted communities (particularly for beans and sweet potatoes) and on the observable impact of Africare interventions on the direct beneficiaries, it makes the indirect impact bigger and is likely to result in a faster diffusion of new technologies beyond Africare's target communities.

The end-term survey report showed that for most improved technologies and agronomic practices (e.g. use of improved crop varieties, line planting, appropriate spacing and seed dressing) that were adopted, the dominant source of information for Africare households was Africare and for non-Africare households, was fellow farmers. It is possible that the non-Africare households received information on these technologies from fellow farmers who were trained by Africare (i.e., Africare households). If Africare-promoted technologies have been passed on to non-Africare households through farmer-to-farmer extension, disparities in crop performance are likely to have been reduced, so that impact measures based on comparison of Africare and non-Africare farmers would understate the impact of Africare interventions.

(c) Farmers' exchange visits

Both internal and external visits have been undertaken. Internal visitshave been conducted within the district while externals involve farmers traveling across districts. Most of the visits however have been internal among Africare, AAMP, and NAADS groups. These visits have enabled farmers to feel challenged by colleagues who are using improved practices and technologies under the same working environment. In addition, the exchange visits have strengthened the linkages between NAADS, AAMP and Africare groups.

(d) Leaflets and video messages

These have been used particularly in disseminating information on the prevention of the banana bacterial wilt disease and in informing communities on the use and importance of orange-fleshed sweet potato varieties. To date, over 3,000 farmers have attended video shows about the dangers of the banana bacterial wilt disease and control measures. In addition, more than 2,500 leaflets showing the symptoms, spread, and control of banana bacterial wilt disease have been distributed to the banana growing communities of Ntungamo and Rukungiri districts.

3.4. Mid-term Recommendations and their Implementation.

The MTE team for UFSI-II made several recommendations for changes aimed at improving the performance of the agriculture section. This section discusses the action taken on these recommendations, and explains the reasons for failure to implement some of them.

During the MTE, it was noted that NARO was adopting a 'systems' rather than 'commodity' approach of research as a means of increasing the impact of research on farmers' welfare. A recommendation was thus made for Africare to follow suit as a way of strengthening the NARO-Africare partnership. The MTE team considered this to be very important, since NARO is likely to stay and continue giving support to farmers in areas served by the partnership long after UFSI-II closes. However, the systems approach was not adopted by Africare because it would have involved activities that could not be accommodated within the DAP. Also, by training farmers in improved agronomic practices such as composting, soil and water conservation technologies, post harvest handling techniques that are not crop-specific, Africare is implicitly implementing a systems approach to development.

The MTE team noted that Africare did not have a formal partnership with NAADS, backed up by a memorandum of understanding (MOU) as is the case with other NGOs (such as A2N and ICRAF) that work with NAADS either through providing technologies or developing farmers' institutions. It was observed that there are opportunities for Africare to strengthen this important partnership by offering to provide services for technology adaptation, farmer institution development, and building the capacity of NAADS service providers to address crosscutting issues such as NRM, and gender and HIV/AIDS—which Africare was already planning to mainstream into its activities.

It was, therefore, recommended that Africare explore possibilities for partnering with NAADS in a more formal way (e.g., at the MOU level) to enable NAADS to complement Africare's efforts and sustain its achievements beyond the project. This was critical especially for Africare communities growing apples and other fruit trees as a commercial enterprise because by the time they start experiencing harvesting, post-harvest and marketing challenges, UFSI-II will have ended and NAADS should be available to provide support. Since the MTE, Africare has continued to collaborate with NAADS, albeit informally through farmer exchange visits and efforts to link farmers to markets. Although the NAADS-Africare partnership was not formalized, many of Africare's farmers groups have registered at the sub-county level and are benefiting from NAADS services, and will continue to do so after UFSI-II closes. It is important, therefore, that Africare encourages and facilitates its groups that have not yet registered with NAADS to do so before the project closes.

The MTE team also observed a need for marketing studies to identify the varieties of apples preferred by consumers to guide farmers on which varieties to grow. A marketing study was conducted and two apple varieties, Ana and Dozette, were selected and recommended to farmers. A summary of the recommendations and action taken is presented in Table 3.5. Recommendations for changes were also made for some of the impact and monitoring indicators, and these are discussed below.

Impact Indicator 1.1.1. Average annual vol. (kg) of household production (Solanum potatoes, beans, orange flesh sweet potatoes and bananas)

Monitoring the volume of production based on farmers' recall is acceptable but the accuracy of the information collected is highly dependent on the skills of the extension agents collecting the information. Skillful probing is necessary, and the MTE team recommended developing a standard format for collecting this information and training the extension staff thoroughly on how to collect this information. A standard format for data collection was designed and all field extension staff received some basic training. Additional training has been planned for the next quarter. Regular supervision of the extension staff by the section head was also recommended because it is critical for data quality control. Supervision has been carried out mostly on a monthly basis, but sometimes it is done quarterly because of other pressing demands on the section heads' time.

Monitoring Indicator 1.1.3. # Households adopting at least 3 improved agronomic practices

The MTE recommended that this indicator remain as is (i.e." lumpy" in the sense of grouping together agronomic practices) in the IPTT for ease of reporting because there are very many agronomic practices, but that improved seed adoption data be collected and monitored separately. This is because farmers rarely adopt technology packages as a whole, but rather stepwise, starting with seed and gradually adding other components of the package. This is important in promoting the sustainability of the higher yield arising from adopting improved seed, which depletes soil nutrients much faster if not accompanied by use of soil amendments.

So the MTE recommended that the adoption of seed and agronomic practices be monitor separately to provide an insight into the sustainability of production. It was also noted that some agronomic practices are more critical than others in sustaining production for specific crops, thus the need to collect information on each of the recommended practices for each of the crops to enable the section heads to analyze this information on a regular basis. This was considered necessary to understand which practices are being adopted faster and why, to guide the allocation of effort for promoting different practices depending on how critical they are and how fast they are taken up by farmers. These recommendations were not implemented because of time and manpower limitations. It is very important that they are implemented in the next Multiple Year Assistance Program (MYAP).

Monitoring Indicator 1.2.2. # Newly established agro-based enterprises

The purpose of supporting the development of new agro-based enterprises is to increase income-generating opportunities as a means of eradicating poverty. The government strategy in line with this objective is to promote the production of high-value crops, so the MTE recommended that new enterprises be monitored separately to provide information on the proportion constituting high-value crops. This recommendation was successfully implemented.

Also emphasized at the mid-term was the need to increase the capacity of extension staff to collect accurate data, and for other staff, particularly the section heads, to analyze this data regularly and use it as a tool to guide future interventions. Recommendation was also made for staff training in data recording and analysis, and facilitation with computer software. The final evaluation team noted that extension staff have been given some basic training and more training is planned for the next quarter. Also, a new agriculture section head with relevant analytical skills was hired, making the recommended training unnecessary. However, staff training for all section heads in data analysis is recommended for the next MYAP.

3.5 Achievements at the End of FY05

By the MTE, five MOUs had been signed to exploit synergies with partners in implementing UFSI-II interventions. Of the five, three are currently operational and one more was signed after the MTE to bring the number of currently operational contracts to four. The reason some contracts ended is because they had served their purpose. For example, Agro-genetic laboratories LTD and CABI international accomplished the respective tasks of improving and providing clean banana planting materials; and undertaking studies on plant population density to achieve optimum seed size.

Regarding seed multiplication, 4 farmers groups and 6 individual farmers are currently producing seed on a commercial basis. In addition, over 112 farmers are currently undergoing training in potato production using the FFS approach. Graduates of these schools who meet the requirements for UNSSPA are expected to become commercial potato growers. A total of 8,750 tissue culture banana suckers were planted in 75 multiplication sites from these, 1,600 plantlets have so far been transplanted to individual gardens and more are to be transplanted at the onset of the rains. Also 2,500 plantlets from clean farmer owned gardens were planted in season FY04.

The number of times extension agents met farmer groups has significantly reduced since the start of UFSI-II. For the farmers' groups taken up in FY02, the number of visits by extension agents averaged 84 times, but for the groups taken up in FY03 and FY04, only 48 and 42 visits have been made per year, respectively. This decline in the number of visits per group reflects the increasing number of villages taken up by UFSI-II in FY03 and FY04. In 2005, this number declined even further to 36 visits, and most of these visits were in the new villages taken up in 2005. This was due, primarily, to the introduction of new villages without a commensurate increase in extension staff. For example, Kabale district is supposed to have two extension staff under the agriculture section but it has only one. For the other districts, the extension staff on agriculture also does NRM work, making it hard to make frequent visits to farmers.

Problems of inadequate number of staff and supervision were also cited during the field visits, and have contributed to the decline in extension visits to farmers. This decline is important, since the more frequent the contact between farmer and extension agent, the more likely the adoption of a new technology. During the final evaluation field visits it was observed that farmers' groups taken up in FY02 have adopted the agronomic practices (both at the communal demonstration plot and individual field level) more than the groups of FY03 and certainly more than the groups of FY04 for Africare's target crops. This was confirmed by the end-term survey, which showed a higher level of adoption of Africare-promoted technologies by households taken up in 2003 than those of 2004 or 2005.

The field reports of 2005 showed that the performance of Solanum potatoes in Ntungamo and Rukungiri was far below the target, due to the high incidences of bacterial wilt that is favored by the high temperatures in these two districts. One of the Africare-supported farmers' groups visited by the final evaluation team in Rukungiri planted two bags of Solanum potato seed in 2005 but harvested nothing and members of this group were appealing to Africare to assist them with seed for planting next season. In addition, beans in Ntungamo have suffered persistent attack by birds and the bean root rot (BRR) disease.

Table 3.5 Mid-term Evaluation Recommendations and Action Taken on Agricultural Component

Recommendation	Action taken/progress	Comment/Remarks
Adopting a systems approach to R&D	Africare in partnership with NARO is training farmers in improved agronomic practices that are non-crop specific such as composting manure, soil and water conservation, post harvest handling, among others. Also, together with NARO Africare is selecting and supplying improved seed varieties to farmers such as temperate fruit trees and clean seed of intervention crops.	Although a systems approach is time consuming, expensive and not catered for in the DAP, Africare through disseminating non crop specific technologies, is indirectly applying a systems approach
Supporting small scale Irrigation	A small scale irrigation scheme for Nyakibande has been designed by Africare and implementation is underway	In Nyabyumba, the management of Nandos restaurant is cost sharing installation of a small irrigation scheme. This is being facilitated by Africare/CIAT partnership
Strengthen partnership with CIAT for continued support of farmers' efforts to penetrate competitive market chains	Through Africare/CIAT partnership, the ERI initiative has developed the Nyabyumba/ Nandos market which is currently running for the third year. To strengthen the farmer market linkages and Africare/CIAT activities, a marketing officer was recruited. Thus, with CIAT, quarterly meetings have been planned for to review, create and strengthen, and sustain farmer- market linkages. Through participatory enterprise development involving CIAT and Africare, a number of groups are processing legal entity while some have been linked to potential buyers	10 groups have been linked to potential buyers
Continued use of the FFS approach	The CIP/IFAD potato project is on going in 4 communities to disseminate the recommended technologies in managing late blight and bacterial wilt diseases in potato.	More FFSs for potato are planned in the next quarter. Also, there is a plan by NARO to extend FFS of managing the bean root rot in Ntungamo. This will be facilitated by Africare
Formalizing NAADS/Africare partnership	Africare has built capacity of farmers groups to demand for services from NAADS as well as being potential service providers. For instance, some groups were certified by UNSSPA to produce and supply clean seed to NAADS and AAMP. Africare has further facilitated them to register with NAADS. As a result communities are sourcing support from NAADS for extension and other project inputs from NAADS and AAMP.	Africare can not form formal partnership with NAADS since the former is not profit making and is not registered with NAADS as a service provider. Also, the system of providing services to NAADS involves biding for contracts, which is outside Africare's mandate
Strengthening partnership with organization mandated to promote fertilizer use	Africare obtained inorganic fertilizer literature materials from USAID which were used to train communities on safe fertilizer use. In addition, through NARO and CIAT partnership, farmers are being trained and exposed to all available options for improving soil fertility, with use of inorganic fertilizer inclusive.	

There also was a serious drought in the entire southwestern region of Uganda in 2005. All these factors combined to reduce yield well below the targets, forcing Africare to introduce cassava and peanuts and scale up its interventions in banana production in the two districts at the expense of beans and Solanum potatoes. However, this could further reduce yield for the two crops in the two districts, with a negative effect on the percentage of achieved yields versus the targets set by Africare. As part of the effort to address the BRR challenge, NARO in partnership with Africare plans to scale up its FFS activities in Ntungamo.

3.6 Comparison of UFSI-II Agriculture Achievements at end of FY05 in Relation to DAP Targets.

3.6.1 Agricultural Production and Productivity

Despite constraints of staff turnover, and a serious drought over recent months, it is clear that the practical and integrated training approaches used during Africare's interventions has enhanced technology adoption among Africare farmers. For instance, as of Sept. 2005, 2,903 households were practicing at least 3 improved agronomic practices compared to the 450 reported at the baseline of 2001. Also, the adoption of disease resistant and high-yielding varieties of beans (such as NABE 12C popularly known as Sugar-3) coupled with the integrated disease management strategies on BRR has significantly increased bean yields from 0.8 MT/Ha at baseline to 1.8 MT/Ha at the end of FY05—an increase of 120%.

The knowledge acquired by farmers through the potato FFS as well as the improved potato seed provided by Africare has resulted in increased potato yield from 9MT/Ha at the baseline to 10.2 MT/Ha at the end of FY05. Also, the average annual volumes of production of the different Africare-supported crops have increased. For instance, in the baseline report (2002), the average annual production volumes in Kg/ household of potato, beans, and banana production were 600, 100, and 2,500, respectively. As noted in the Annual Report 2005 (based on Sept/Oct 2005 data), the respective volumes produced are 1,148, 540, and 3,160. The increased volumes produced have clearly reduced food insecurity among the Africare communities. At the baseline, the average months of adequate household food provisioning was 4 months compared to 5.6 at the end of FY05, which is 93% of the DAP target. It is expected that the target will be reached by the end of the project.

The training in improved agronomic practices improved both the quantity and quality of produce. For example, the potatoes produced by Africare communities are free of late blight and bacterial wilt diseases, and rotting is minimal. This has attracted several potato traders to the Africare-supported communities to buy potatoes at competitive prices, and farmers have responded by acquiring more land to produce more potatoes.

3.6.2 Post Harvest Handling

To reduce post harvest losses of potatoes, Africare facilitated farmers by cost sharing the construction of Diffused Light Store (DLS). The farmers contribute land, labor and the locally available materials, while Africare provides materials that are not available locally. At the time of the final evaluation, 47 community DLS have been constructed. As a result of this intervention and farmer training on post-harvest handling techniques, losses of *Solanum* potatoes have been reduced from 40% at baseline to 9.9% at the end of FY05. For beans, losses have been reduced from 30% to 16.5% over the same period.

Table 3.6 Summary of Agricultural Component Performance

Indicator		Baseline Value	Target for FY05	Achieved FY05	% achieved / FY05 target	LOA Target
Impact Indicators						
1.1 Average months of adequate HH food provisioning		4	5.5	6.2	**113%**	6
1.2: Capacity of communities & local govt. to plan & implement Food Sec. Interventions		20	70	80	**84%**	80
1.1.1. Avg. annual vol. (kg) of HH production of	Potato	600	1,400	1,148	**82%**	1,500
	Beans	100	210	183	**87%**	250
	OS potato	812	1,000	540	**54%**	1,940
	Banana	2,500	3,200	3,160	**99%**	3,300
1.1.2 Avg. yield in (MT/Ha) of:	Potato	9.0	11.2	10.2	**91%**	12.2
	Beans	0.8	1.5	1.8	**120%**	1.25
	OS potato	3.9	4.6	5.0	**109%**	5.0
	Banana	16.0	18.0	17.0	**94%**	19.0
1.2.1 Avg. value per participating HH of crop production (constant 2002 Ug. Shs 000		385	-	552	**-**	561
Monitoring Indicators						
1.1.1 # HH adopting at least 3 improved agronomic practices		450	3,500	2,903	**83%**	4,536
1.2.1 %losses post harvest:	Potato	40%	22%	9.9%	**222%**	20%
	Beans	30%	16%	16.5%	**97%**	10%
1.2.2: # of newly established agro-based enterprises		0	20	19	**95%**	72

3.6.3 Marketing Activities

Marketing activities were seen as key in the UFSI-II DAP, since findings at the end of UFSI-I indicated only moderate achievements in marketing. Of the 2,500 farmers expected to have been trained by the project in marketing skills, only 1275 had been trained by the end of UFSI-I. To address this challenge, the agriculture component of UFSI-II sought several partners with expertise in marketing. Notable among these was the *Enabling Rural Innovations* (ERI) project in Africa, which addresses issues constraining the production to consumption continuum. ERI is implemented by CIAT in several African countries, and seeks to enhance the innovative capacity of smallholders to penetrate competitive market chains using participatory market research methodologies. The approach uses groups rather than individuals because the majority of the beneficiaries are small-scale farmers that would find it very hard to penetrate markets on their own. An MOU was signed between CIAT and Africare in October 2003.

Since 2003, Africare's marketing activities have been jointly undertaken with this. Using groups, Africare trains farmers in developing simple business plans for enterprise development and facilitates their linkages to markets. Through ERI, one of the Africare-supported groups (Nyabyumba United Farmers' Group) was linked to Nandos (a fast food restaurant in Kampala) as part of UFSI-II market-linkage activity (see Box 3.2).

Africare is also in the process of linking beekeepers to the Agriculture Development and Integrated Organic Farming (ADIOF) organization which exports honey to the EU market. In addition, Africare together with NARO and CIAT, are in the process of linking potato farmers to potential crisp factories in Kampala. Farmers are in the process of multiplying this variety to raise the 2.4 MT per week required by

the crisps market. Another important linkage was between chili farmers in Shunga village in Ntungamo district and buyers in Rukungiri, and so far 100 kgs of chili worth Ug Shs. 280,000 (about US$160) have been sold to the buyers. The marketing officer hired by Africare, as recommended in the MTE, facilitated these linkages. In addition, 680 farmers have been trained in marketing skills and 19 new agro-based enterprises have been established and are functional. Of these, 10 groups have been linked to potential buyers; 4 have formed marketing associations; and 5 are still at enterprise development level.

Box 3.2 Nyabyumba -Nandos Restaurant Market Linkage

In collaboration with CIAT, Africare developed the capacity of smallholders to penetrate competitive market chains using participatory market research methodologies. Several farmers' groups have been linked to markets as a result of this collaboration. One such group is Nyabyumba United Farmers' Group comprising 43 females and 30 males. In July 2003 this group was linked to Nandos (a fast food restaurant in Kampala) as part of UFSI-II market-linkage activity. The process of identifying Nandos as a potential buyer initially involved meetings between Africare, CIAT, PRAPACE, and the farmers. The farmers were organized into a marketing group. Africare then facilitated the group and its partners to select enterprises through a participatory approach. These included *Solanum* potato, goats, and chickens, among others. Farmers' representatives were then elected by the group to constitute the marketing committee. Together with Africare and CIAT, the committee conducted a farmer market research to establish the most profitable and affordable enterprises. The potato enterprise was selected. Africare, PRAPACE and CIAT facilitated meetings between individual potential buyers and the marketing committee,. With each buyer, the meetings discussed quality, quantity, prices, packaging, and frequency of delivery. Among the potential buyers, Nandos offered the best opportunity and was selected.

In July 2003, a contract was signed between Nandos Nyabyumba United Farmers' Group for the supply of 11.28 MT of potatoes per month with a diameter of not less than 7 cm. To achieve the required quality and quantity, CIAT and NARO in collaboration with Africare conducted farmer participatory experiments and established the appropriate spacing, de-haulming time, and optimum fertilizer rate to produce the quality and quantity of potatoes required by Nandos. This contract is renewed annually and has enabled the group to earn an accumulated income of Ug. Shs. 73,770,000 ($40,983) from potato sales. The group has also opened a bank account, and established a revolving fund that is currently being strengthened into a savings and credit scheme. To date, the revolving fund scheme has accumulated savings of Ug. Shs. 1,265,000 ($703). 24 group members have established new iron sheets buildings; 30 members now purchase seed directly from the suppliers; 36 members have bought goats while 12 have purchased cows; and 50 members can now afford hiring labor to work on their farms. In addition, gender awareness within the group and at household level has increased and as a result, families now plan as a unit.

At the baseline (2002), no agro-based enterprise was reported, but to date, 19 such enterprises have been established, or 95% of the end of the project target (20). Such enterprises include tree nurseries, apple, potato, groundnuts, beans, maize, soybean and goat production, and apiary management. The established tree nurseries have stimulated the adoption of tree planting by even non-Africare members who buy the seedlings. Through the sale of potatoes, beans and maize, most communities have generated money to sustain group activities. The income raised has been used to buy agricultural inputs (such as seed) and rent land, and to start savings and credit schemes from which group members can borrow money. The average income earned from agricultural produce among the Africare groups has increased from Ug Shs. 385,000 at the baseline to Ug Shs. 552,000 at the time of the 2005 Annual Report (Sept./Oct. 2005).

3.7 Cross-cutting issues

Interviews with farmers during the final evaluation indicated that the village action plans have been an extremely useful tool not only in agricultural planning but also in leadership activities and in the empowerment of women. Building on skills acquired developing these VAPs, many women have successfully campaigned and been elected to leadership positions in local administration. Many members of Africare's village production committees (men and women) have been elected to represent their groups at the sub-county farmer fora under the NAADS program.

However, as noted in the MTE report, the need to impress upon the village committees the importance of expanding group size with time, as more and more people become interested in the activities being promoted by Africare, still remains. There still is reluctance to extend membership to new people to prevent them from enjoying benefits generated by the efforts and financial inputs of the old members. Some groups are asking the aspiring members to contribute the equivalent of what each individual member has contributed to the group since inception, which is prohibitive. A need was observed during the MTE to put in place a mechanism that allows new people to join at a lower (or no) benefit level and allow this to grow with time spent with group. This need still remains.

There is also a need to create a culture among original members of village committees of sharing the knowledge they have acquired through outreach and training of others to increase the adoption of Africare's interventions and expand the impact to entire communities. Although members of Africare groups have been reluctant to allow new members into their groups, they reported smooth exchange of information and inputs with non-Africare farmers as reported earlier.

3.8 Lessons learned

During the field visits, the strong correlation between the length of time since a village was taken up by the project and its adoption of promoted technologies and the impact on crop performance and welfare of the beneficiaries was clearly visible. The quarterly reports of UFSI-II also show that farmer groups taken up in FY02 have adopted improved seed and recommended agronomic practices more than the FY03 and certainly more than the FY04 groups for Africare's target crops. The end-term survey confirms this. Those households that benefited from Africare's earlier interventions (2003) are showing greater impact in terms of food security status and income than those that came on board later (2004 or 2005). By projection, it can be deduced that farmers outside the target communities of UFSI-II are even worse off, meaning that there is yet to be a critical mass of adopters to propel the process of agricultural modernization initiated by Africare beyond the target communities.

The MTE recommended the scaling-up of entire communities and not just individual farmers if farmers are to be transformed. During the final evaluation field visits, it was observed that Africare farmers are exchanging the improved seed received from Africare for local varieties with non-Africare farmers, thereby expanding the project's impact to entire communities. The end-term survey report also shows that non-Africare farmers are receiving Africare-promoted inputs and practices from Africare farmers. But still, most Africare groups are reluctant to extend membership to new people. It is important that, before the project closes, a system be put in place that allows new people to join at a lower benefit level, while allowing benefits to grow with time spent with the group. Initial members of village committees need to be encouraged more to share the knowledge acquired by the original members of village committees, through outreach and training of others. This would increase the adoption of Africare's interventions and expand the project's impact to entire communities.

Also noted during the end-term field visits is the reluctance of farmers to apply manure on intervention crops planted on rented land. This runs counter to other literature (Sserunkuuma, 2005; Nkonya et al., 2004) on Uganda, which shows intensification to be occurring more on rented land than land acquired through other means, including purchase. Because of the serious land shortage in southwestern Uganda, it is inevitable to rent land, so those who rent land need to be encouraged to farm it more efficiently. This reluctance may be because Africare's efforts to promote manure use in the project area have had less

impressive success in enhancing yield because it does not supply all the required nutrients in appropriate quantity, and is bulky and difficult to carry over the mountainous terrain (MTE Report, 2004).

3.9 Opportunities and Recommendations for Sustainability

Africare has a long history of collaboration with NARO. Strengthening this partnership will ensure that the latter continues to give support (new technologies and technical advice) to farmers in areas served by the partnership after the project closes. *It is important that Africare leaves behind a skeleton staff for a few years to work the NARO staff to finalize interventions at a level where farmers can carry them through, especially in communities that were taken up recently.* This is based on the findings noted above that groups formed first were found to have successfully adopted new practices, while those formed towards the end of UFSI-I lacked both understanding of issues and adoption of practices, thus requiring additional support (UFSI-I, Final Evaluation Report, 2001). The end-term survey findings also suggest that households that have spent longer with the project have had a greater impact from Africare's interventions than those taken up later.

Africare also needs to intensify its partnerships with other institutions and organizations (besides NARO) that are likely to stay longer in the project area so they can carry on with the most critical UFSI-II activities after the project ends. Africare needs to facilitate its farmer r groups that are not yet registered with NAADS to do so, to enable them receive support after the project closes.

The FFSs started by NARO and Africare have been very successful and the graduates of these schools have started their own FFS. Continuing to use the FFS approach to teach farmers brings sustainability because graduates remain to teach other farmers at the end of Africare's activities. In addition, some graduates of Africare's FFSs are selected under NAADS to receive additional training to equip them with the necessary skills to become community-based workers (community resource persons). Others have are chosen to represent their groups at sub-county farmer fora under NAADS. Africare has also trained growth-monitoring persons, and these will remain behind in the villages to carry on with growth monitoring activities after UFSI-II closes. *Building on these experiences (graduates of FFS and growth monitoring persons), Africare should identify the most capable members of their food security committees for further training, so they can train others when UFSI-II ends*.

Africare has also had a very successful collaboration with CIAT, in developing the capacity of smallholders to penetrate competitive market chains using participatory market research methodologies. To sustain these interventions, CIAT plans to continue working on the same activities at least for the next couple of years using its own resources. In addition, CIAT is looking for alternative sources of funding to fill the shortfall in financial resources that the withdrawal of Africare will create. *It is important that Africare intensifies joint planning meetings with CIAT for the remaining part of the project, to map out the most effective exit strategy for UFSI-II. Among other issues, it is important that Africare identifies the most critical areas of UFSI-II interventions where CIAT should put its limited resources, to enable prioritization of resource allocation.* CIAT is also working with government programs that are likely to stay much longer in the project area, such as NAADS and plans to strengthen these working relationships.

Africare should build the capacity of its farmers groups to manage their own financial resources generated by group activities under UFSI-II, to enable group saving and lending (rotating savings and credit scheme) as a way of sustaining group activities. Some groups have already started revolving savings and credit scheme from which they lend money to group members at a small interest, which will help to sustain group activities beyond UFSI-II. Those groups that have not done so should be encouraged and supported to develop capacity to manage their financial resources before the end of UFSI-II. Other groups have bought land and constructed potato store on their land using group resources, which is an incentive for them to stay together.

Africare should intensify partnerships with organizations that have the mandate to promote fertilizer use, to ensure that farmers are exposed to all available options for increasing agricultural productivity to enable them to make an informed choice.

Since the MTE, Africare has worked closely with the district staff to fight banana bacterial wilt, and Africare has trained the district staff on a number of technologies that Africare is promoting. To sustain Africare interventions, it is important to have joint planning meetings, where Africare invites the district staff to their meetings. It was noted, however, that despite efforts by Africare staff to do this in the past, there has been reluctance on the part of the district staff to come to the meetings when invited because of not being paid allowances for attending these meetings

It is important that Africare holds joint planning meetings with its partners, including the district staff, for the remaining part of the project, to involve them in designing the exit strategy for UFSI-II that will make it easy for the partners to carry on with the interventions.

Finally, Africare should document the lessons learned from UFSI-II program so that other development practitioners can use them for development activities in the project area and elsewhere. It is recommended that a video-documentary be done to document the lessons learned.

3.10 Recommendations For the New MYAP.

- Disaggregate the "lumpy" indicators (e.g., on adopted agronomic practices, newly established agro-based enterprises). Some agronomic practices and newly established agro-based enterprises are more critical than others in sustaining production for specific crops and reducing poverty. There is need to collect information on individual practices and enterprises to enable the section heads to analyze this information on a regular basis, and to use the results as tool to guide intervention strategies.

- Develop a standard and easy-to-understand format for collecting data for M&E and provide solid training to extension staff to improve the quality of the collected data. Section heads also need training in analytical skills to enable them to analyze the M&E data regularly for use as a tool to guide intervention strategies.

- Provisions need to be made for future survey data (baseline, mid-term and end-term) on production and yield to be collected using plot-area measuring equipments such as GPS. The provisional end-term survey results on crop yields are below DAP targets for most crops, especially beans and Solanum potatoes. This is most likely the result of farmers giving inaccurate information on area planted to the crops they harvested in 2005. Because of the shortage of land in southwestern Uganda, farmers' plots planted to various crops are very small, such that asking them to estimate plot area in acres is near to impossible. It is, therefore, recommended that future survey data (baseline, mid-term and end-term) on production and yield be collected using plot-area measuring equipments.

CHAPTER 4 NATURAL RESOURCES MANAGEMENT

4.1 Problem Context

4.1.2 National Context of the Problem

The increase in Uganda's agricultural production over the years has been primarily through the expansion of cultivated area rather than through better land management and improved agronomic practices. Uganda's soils were once considered to be among the most fertile in the tropics, but problems of soil nutrient depletion, soil erosion and other manifestations of land degradation have increased sharply. Annual average soil losses in Uganda are estimated to be more than 70 kg of nitrogen, phosphorus and potassium (NPK) per ha, one of the highest in Sub-Saharan Africa (Stoorvol and Smaling, 1993).

Low and declining land productivity has led to poverty, food insecurity and an inadequate supply of wood and other forest products. Increasing poverty and food insecurity have, in turn, contributed to land degradation. Poor and food insecure households are unable to keep land under fallow or invest in improved land management technologies/practices that put some portions of land out of crop production or are expensive to construct and maintain, or use costly inputs such as chemical fertilizers.

In 1997, the Ugandan Government launched the Poverty Eradication Action Plan (PEAP). This framework (PEAP) has seven pillars, the second of which emphasizes the preservation of the natural resource base, particularly soils and forests, in the modernization of agriculture to ensure sustainable agricultural production and development. This is also in line with the seventh Millennium Development Goal (MDG) that calls on countries to reverse the losses of environmental resources by 2015.

4.1.3 Regional context of the problem

Africare is implementing Phase II of the UFSI project in the southwestern Uganda districts of Kabale, Kisoro Ntungamo, Kanungu and Rukungiri. The objective of the natural resource management (NRM) component of UFSI-II is to enhance conservation and management of soil, water and other natural resources for sustainable rural development in the project area. The highlands of southwestern Uganda, commonly referred to as Kigezi highlands, were for several decades a key food producing area in the country. However, an increasingly high population density, presently estimated to be 370 persons per km^2, together with intensive land cultivation with minimum inputs has led to a situation where land degradation is threatening the region's food security.

This high population pressure has also led to serious fragmentation of land, with households typically farming small, scattered plots. A recent survey[13] carried out in the watersheds of the five target districts by Africare and the International Food Policy Research Institute (IFPRI) found the average size of land holdings to be only 1.16 ha per household. This is very small compared to other regions of Uganda which on average have 2.0 ha per household.

The situation has also resulted in low and declining yields of major crops. In the Kabale District, for example, farmers' yields are typically less than one-third of the yields on research stations, and yields of major crops are reported to be declining (MAAIF 1998, World Bank 1997). The majority of the households do not use commercial fertilizers nor do they practice any form of fallow. Application of compost manure is limited to plots of land near the homesteads because of land fragmentation and the difficult, mountainous terrain across which to carry the compost.

Recent AFRENA-Uganda studies indicate that an estimated 10% of formerly arable land in the region has become so degraded that it is now permanently out of production. Moreover, the area of land abandoned due to its degradation is increasing by approximately 3% per year (AFRENA 2003) This land degradation

[13] Asset Status and Income Baseline Survey Report in Southwestern Uganda, Africare/IFPRI, 2002.

has contributed to the low yields cited above, and low productivity, and this deterioration of the natural resource base has increased rural poverty, malnutrition and the inability to meet basic human needs.

Biomass, primarily consisting of forest resources and other organic matter, remains the major source of energy in Uganda with up to 94 % of the population depending on it (UNDP, 2005). Although biomass can be an environmentally sound source of energy, its production and use are often unsustainable and can have adverse effects on the environment. Results from the National Bio-mass Study (2003) indicate that firewood production is meeting only 60% of demand in the southwestern Region. The 40% shortfall is met by improvising. The majority of households are increasingly using crop residues as a source of energy for cooking. This practice, however, has a negative impact on soil fertility management as this continually takes away the materials that would otherwise decompose and release soil nutrients.

4.2 Partners

The UFSI phase II project fully recognized the importance of partnership synergies in trying to achieve its objectives and worked with a number of organizations during the course of implementing its activities. This section gives a brief account of partners as well as the nature and benefits realized from the various partnerships. The key UFSI-II partners and the areas of the partnership are shown in Table 4.1 below. These partnerships have worked extremely well to advance the project objectives and it is recommended that they be continued and expanded to new partners as the need arises, even after the closure of the project. This would clearly enhance the sustainability of activities. The Final Evaluation team met with key partners such ICRAF and NARO on agro forestry and fruit tree growing, Kigezi Private Sector Promotion Center Limited on apiary development, and district environment offices on soil and water conservation.

Collaboration with ICRAF/NARO: ICRAF/NARO undertakes research on agro forestry and fruits, as well as farmer capacity building and dissemination of research results to farmers. The collaboration with Africare involved backstopping farmer groups supported by Africare, training Africare's extension staff, and technical support for nursery establishment and management, temperate and tropical fruit management, and germplasm supply for both tree seeds and fruit seedlings. Other support that ICRAF/NARO provided to Africare was the identification of watersheds using GIS, and joint planning and review workshops, involving extension staff and farmers. Ideas and experiences were shared in these meetings on how to work as a team. ICRAF/NARO and Africare also jointly monitored the adoption by farmers of field interventions.

Overall, this has clearly been a very successful partnership. *Through this collaboration, appropriate research and development ensured that the right technologies reached a larger number of communities. This collaboration also enabled a better utilization of resources as most activities were undertaken jointly and both sides benefited from each others comments and suggestions on the way forward. This is a lesson that Africare can use in other projects it intends to implement. It is crucial that the linkage between research-development-farming communities is maintained. This is a lesson that Africare can use in other projects it intends to implement. It is crucial that the linkage between research-development-farming communities is maintained.*

Collaboration with Kigezi Private Sector: This partnership involved training farmers to conduct farming as a business through profitability analysis, development of marketing and entrepreneurship skills. It also emphasized group marketing so as to have a strong bargaining voice for farmers. The other area of collaboration was through apiary development for Africare groups. Farmers and Africare staff were trained in apiary management, and also equipment for apiaries such as harvesting kits was supplied to ensure good quality honey. In addition, farmers were linked to equipment suppliers and honey buyers. *The partnership has benefited both parties as Africare groups have benefited from the market analysis, while the private sector has gained by reaching more communities and potential honey suppliers. Further collaboration is possible on financial matters and entrepreneurship and business development through the Ministry of Finance Micro Finance Outreach Plan whereby the private sector can provide free extension services to Africare farmer groups since, through this outreach plan, financial extension*

officers have been posted in 8 sub-counties in Kabale district e.g. in Ruharo, Bukinda, and in Kaharo. It is recommended that Africare provides the Kigezi Private Sector Organization with a list of all UFSI farmer groups in all the districts they operate in so that they can be empowered with financial management skills.

Collaboration with Kabale District Environment Office: The main areas of collaboration with Africare have been soil erosion control and watershed management. Through the district office, NEMA has been able to replicate the interventions that Africare has been promoting to other areas in the district. This has also been initiated in the other project districts such as Ntungamo. This has been through training of district environment staff on these interventions and also acquiring planting materials for land stabilization such as *Setaria* grass from Africare sites. The District Environmental Officer has also worked with Africare on events such as the World Environment Day through active participation and donation of materials such as tree seedlings to establish agro forestry and soil erosion control demonstration sites. The district staff have also benefited from exchange field visits to Africare groups in Hamurwa, Kaharo and Kitumba where there are tree nursery beds and ***Calliandra*** hedges. ***This has been a very useful collaboration: NEMA monitors the watersheds where Africare has planted trees and constructed trenches, and the District Environmental Officer has been actively involved in this process. This partnership arrangement has spread to other sub-counties (e.g Muko and Ikumba) and Africare project sites have become sources of planting materials for stabilizing conservation structures in other areas in the district.***

Generally these partnerships have worked extremely well. They have benefited Africare and its partners, as well as contributing in no small way to the project's success. *It is recommended that, where feasible, they be continued through the district offices once the project closes. It is also recommended that similar modes of partnership be pursued in future project areas.*

Table 4.1 Key UFSI-II Partners in Natural Resources Management Activities

Partner	Area of partnership
World Agroforestry Centre (ICRAF)/National Agricultural Research organization (NARO)	• Promotion of agro forestry practices for soil and water conservation • Training project staff and farmers in appropriate agro forestry technologies • In partnership with the project and farmers, carrying out on-farm trials for agroforestry technologies • Exchange of information and communication materials • Supply of tree seed to farmers
Kigezi Private Sector Promotion Center Ltd. (KPSPCL)	• Provision of information and training materials on such as bee keeping and post harvest handling of honey • Training Community Resource Persons in modern apiary management • Training farmers in post harvest handling skills • Training farmers in business skills
The Diocese of Kigezi Water and Sanitation program	• Provision of technical expertise in constructing appropriate roof water harvesting facilities such as water jars and water tanks • Training community resource persons in constructing roof water harvesting facilities and maintenance • Training target communities in proper water sanitation and hygiene
International Food Policy Research Institute (IFPRI)	• Conducting project baseline and impact surveys • Building the capacity of project staff in conducting baseline and impact surveys Training staff in data analysis using various packages
The Uganda Agro forestry Development Network (UGADEN)	• Conducting information sharing workshops for the various stakeholders in agro forestry • Facilitating sharing of information on agroforestry practices among stakeholders • Coordinating implementation of agroforestry technologies by different stakeholders in the Kigezi *montane* ecological zone
Makerere University Faculty of Forestry and Nature Conservation (FFNC)	• Hosting students from the University offering courses in NRM on practical field attachments • Sharing of information and training materials in community forestry
Environmental Conservation Trust of Uganda (EOTRUST)	• Funding the implementation of NRM activities • Monitoring progress of NRM activities • Technical backstopping the NRM activities
Mgahinga and Bwindi Impenetrable Forest Conservation Trust (MBIFCT)	• Sharing of experiences and information on NRM activities

Sub-county and grass root local governments	• Providing an enabling environment for technology adoption in communities • Facilitating communities to develop village action plans • Monitoring the establishment and implementation of NRM activities by communities • Facilitating the formulation and enforcement of NRM bye-laws
District Department of Environment/National Environmental Management Authority (NEMA)	• Sharing information materials on environmental management • Creating awareness in the communities on better environmental management practices
Communities	• Implementing and sustaining NRM activities promoted by the project

4.3 Evolution of the Project's NRM Activities

4.3.1 Intervention Identification Process

Natural resource management and land management in particular are key to improving the food security of the people in southwestern Uganda who depend on the land for their livelihoods. Soil erosion control and soil fertility improvement are the major interventions of the project that were considered to address the problem of declining crop yields and hence food insecurity in the target districts.

The project's baseline survey conducted by Africare (2002) in the five districts clearly indicates that poor land management was a major cause of declining crop yields in these areas. It was also observed that present farming practices, such as the destruction of terrace bands, cutting down of trees and over-cultivation, were damaging the environment.. Farming in this part of the country is highly complex and diverse such that farmers grow a wide variety of crops on small and fragmented pieces of land.

The land fragmentation problem further complicates the issue of managing land resources. This problem warrants a community collective action approach where all households with land on the same slope come together to address soil erosion challenges. In order to ensure community compliance in working together to implement NRM technologies, the project's component facilitated communities to formulate watershed byelaws. These were formulated and are being implemented with the help of the leadership of local councils.

To reverse the trend of rapidly degrading soils and food insecurity, AFRICARE with funding from USAID through the Environmental Conservation Trust (ECOTRUST), embarked on implementing the NRM interventions in UFSI-II. The main goal of this component was ***to enhance conservation and management of soil, water and other natural resources for sustainable rural development in the*** *project area.* This is consistent with GOU's development agenda of *eradicating mass poverty* and also USAID/Uganda mission's strategic objective SO7, ***Expanded Sustainable Economic Opportunities for rural sector growth.***

The NRM activities were integrated in both UFSI-I and UFSI-II, and emphasized building the capacity of communities to plan and manage natural resources and training them in a range of soil and water conservation technologies in order to conserve the resource base upon which program beneficiaries rely for their livelihoods.

To attain this goal, the component addressed the following three strategic sub-objectives:

- Building local capacity to plan and implement NRM interventions
- Conserving and enhancing the productive potential of threatened agro-ecosystems; and

- Improving the income generating opportunities through wise use of natural resources.

The process of implementing NRM activities always begins with conducting Participatory Rural Appraisal (PRAs) in the selected communities. The PRA meetings are intended to:

- Diagnose and analyze current problems arising from present land management practices; and
- Plan and evaluate alternative land management options that are practical and applicable in given situations in the target communities.

This process has ensured the active participation and support of the beneficiaries in developing practical solutions for these problems.

Community participatory resource mapping is another important tool used in the visioning process. During this exercise, communities draw maps for their communities indicating the natural resources such as rivers, forests and swamps, and soil erosion features such as gullies. These resource maps help the farmers to document the status of the environment at that particular time and, therefore, acts as a community-monitoring tool as it is continually updated on an annual basis to track changes in the community as a result of NRM interventions. This participatory process is very important in building the capacity of local communities to plan and implement the NRM interventions.

Through this process Village Action Plans and/or Watershed Management Action Plans (VAPs/WAPs) were developed. Africare and the communities agree on different obligations in implementing these plans. The beneficiary communities provide all locally available materials and labor. Africare, in turn, provides the resources that are considered crucial but are not locally available, such as tree seed, basic nursery tools and the necessary technical support in the form of training. To implement, coordinate and monitor the developed VAP, it was also realized that there was need for a food security committee (FSC) to coordinate and spearhead the implementation of the plans. These committees have been very important in mobilizing community members to participate in project activities as well as mobilizing the required resources. The committees are also charged with monitoring and evaluating the success of these activities. The community democratically elected members of these committees who have defined roles and responsibilities.

4.3.2 Interventions and Activities under UFSI-I

During UFSI-I the NRM component was referred to as a soil and water conservation component. Its activities addressed a variety of soil erosion and fertility issues such as disseminating and supporting best practices at the farm level for compositing and making liquid manure, promotion of agroforestry technologies involving crops that are compatible with trees and shrubs such as *Calliandra, Alnus* and *Grevillea*, construction of soil stabilizing benches, planting hedgerow trees, and training farmers in soil conservation agronomical practices.

4.3.3 Interventions and Activities under UFSI-II

According to the UFSI-I baseline survey conducted in 2002, 78 % of the respondents reported a problem of soil erosion on their land. Whereas 89% of the respondents reported that soil erosion was increasing, a large proportion (47 %) had performed little or no mitigation measures. According to the Community-level Income and Assets Status Baseline Survey carried in 2003 (UBOS 2003), 87% of community respondents believed that there had been a major deterioration of soil fertility in the SW region since 1997. Likewise, 60% felt that there had been a major worsening of the soil erosion problem, while 20% said that farmland was being abandoned because of irreversible degradation. These results clearly demonstrate the problem of soil degradation and decline in soil fertility. They also show the community awareness of the problem though with little or no mitigation measures being done. Land abandonment due to complete loss of productivity in the area has been increasing and this, in turn, has serious implications on food security in the region.

The same survey indicated a serious problem of decreasing forest and woodland cover in the region, and hence an increasing scarcity of the products and services they provide, such as fuel-wood and protection of the catchment area. In the Community-level survey cited above, only 13% said that there had been a major improvement in availability of drinking water since 1997. In the same survey, 60% observed a major deterioration in availability of energy sources for heating and cooking. These results indicate the serious deterioration of vegetation cover and in particular forest and woodland in the region, making intervention all the more urgent.

The final evaluation team believes that the NRM interventions identified and undertaken in UFSI-II were appropriate and important. They addressed the critical problems identified by the communities. They have also made impressive progress in alleviating these problems in the project areas. The interventions described in the following sections were crucial in controlling soil erosion and enhancing soil fertility.

4.3.3.1 Agroforestry

Agroforestry is simply defined as a land use system where woody perennials are integrated on farmland and where there are both ecological and economic interactions between the trees and other components of the system. The promotion of agroforestry technologies in UFSI-II has been done in close collaboration with ICRAF/NARO that developed and tested the technologies promoted by the project. These technologies have provided a range of benefits such as provision of tree products and services, income generation and soil and water conservation.

According to the project's Final Survey Report (Dec. 2005), the number of people practicing agroforestry had increased from 25% at baseline to more than 50% at the time of the survey in Sept. 2005 as a result of the project's interventions. The same survey also found that the average distance traveled to fetch firewood has been reduced from 1.6 km at baseline to 1.19 km, due mainly to adopting agroforestry technologies.

While these are impressive achievements, field visits of the final evaluation team noted that tree seedlings were far to few. Group members needed a much larger supply to adequately undertake their activities. *There is an urgent need to increase the quantities supplied to the groups, and this is strongly recommended by the evaluation team. Currently quantities supplied range from 1 to 2 kg of seed for Calliandra and Grevillea per group. This needs to be increased to at least 4kg of seed per species per group. It will also be important to establish seed stands for various tree species for the groups so as to sustain seed supply to the groups and also to earn income from sales of surplus seeds.*

a) Contour hedgerows

These are important in controlling soil and water run-off through stabilizing water conservation structures such as terrace risers and water trenches, enhancing soil fertility through nitrogen fixation and providing fodder for animals as well as staking material for climbing beans. Benefits from agroforestry normally take longer than other agricultural activities and this tends to discourage its adoption by farmers. The project has, therefore, promoted goat-rearing activities to utilize the fodder from the trees that have been planted, and this has acted as an incentive for adopting the agroforestry technologies.

It was noted in the field that the areas to be stabilized by the *Calliandra* seedlings are large and that there is need to supply groups with ample supply of this seed in the short term. As noted above, the supply of *Calliandra* seedlings has been inadequate. *To ensure sustainable supplies, Calliandra seed stands need to be established for each group. This will require imparting skills to the groups on seed stand establishment, seed collection, processing and storage. It is crucial that this be done before the project closes.*

b) Boundary tree planting

Boundary tree planting using upper story multipurpose tree species such as *Grevillea robusta*, *Prunus africana* and *Alnus acuminata* have been promoted by the project. These act as wind breaks to banana

plots in addition to providing tree products such as poles, firewood, stakes, timber and medicine. *The numbers planted so far appear to be too few, so the project needs to intensify this activity.*

c) Fruit tree growing

The growing of fruit trees for both nutrition and income generation is also important to the NRM component. The project has facilitated farmers to plant fruit trees (5,500 apple seedlings, 7,000 grafted avocadoes and 4,000 grafted mangoes) for both income and nutrition. The Nyakishenyi watershed community selected coffee as an income-generating enterprise and Africare assisted them in acquiring and planting 20,000 improved coffee seedlings.

It was noted during the field visits that the supply of fruit seedlings appeared to be reasonable for the groups as the number of fruit seedlings per species availed to individual farmers ranged from 5 – 45 depending of the land size of the individual farmer. Before the project closes, it is important that Africare helps all groups to set up fruit mother gardens for both temperate and tropical fruits which will act as sources of scions for future grafting of these fruit trees. It is also important to plant rootstocks in the field which are later grated. This is both cheaper and also enables the fruit trees to establish faster. The project has recorded an impressive achievement in introducing fruit tree growing, but more needs to be done.

Other technologies promoted include the establishment of woodlots (*Grevillea, Sesbania* and *Acacia mearnsii*) for firewood and improved fallows to enhance soil fertility through soil nitrogen fixation. Communities are provided with tree seed for those species whose seed cannot be locally obtained and nursery demonstration tools. The communities in turn contribute labor and land for the tree nurseries. Farmers are, therefore, trained in raising different agroforestry tree species and also share the seedlings that they plant in their individual gardens or community woodlots.

It was observed during the field visits that some tree nurseries were not properly managed. *During the remaining part of the project, therefore, it will be important to train the groups to better manage these nurseries.*

d) Beekeeping

The activity was considered necessary as an alternative form of land use and sustainable natural resource utilization. It also provides income. Nectar extraction by bees is non-consumptive and promotes the conservation of vegetation such as flowers and shrubs to provide nectar for extraction by bees. Households use honey for both as food, medicine and income generation. Being a traditional activity with visible and short-term benefits, it has encouraged farmers to plant agroforestry trees such as *Calliandra* that provide good nectar for honey production. The project trained community resource persons in improved apiary management. Framers in the five target districts were also facilitated to acquire 650 Kenya Top Bar (KTB) hives.

It was noted that the Kigezi Private Sector Organization is training groups in apiary business to ensure good quality honey; and links them to equipment suppliers and potential buyers. This partner is also willing to link Africare groups with the Ministry of Finance Micro Finance Outreach Plan whereby they can receive free extension services in financial management in Kabale district. *It is, therefore, recommended that Africare provide the Kigezi Private Sector organization with a list of all farmer groups that are part of the project so that they can be empowered with financial management skills*.

Some groups in Rukungiri district have been linked to a company called "Apiculture Development and Integrated Organic Farming Limited" that is exporting honey to Europe. This is a welcome development and should be promoted with other groups during the remaining part of the project.

4.3.3.2 Composting.

The majority of households in the target communities cannot afford inorganic fertilizers to increase the productivity of their land because of their low income. Bearing this in mind, the project has trained farmers on how to turn household rubbish and crop residues into manure to enhance soil fertility. This is a

simple technology that does not require a lot of resource and technical input. Compost pits have also worked to improve the sanitary conditions around the homesteads as rubbish is managed and properly disposed. The adoption of this technology has largely been on land parcels that are close to the homesteads. But, as noted earlier, many farmers have fragmented plots of land, and this land fragmentation makes it very laborious and difficult for farmers to transport the manure to the parcels of land that are located far away from the homesteads.

During the field visits this intervention appears not to have been done properly and therefore need to be improved. It is important that several compost pits be set up, so that manure can be collected at different stages of maturity. The evaluation team noted that this did not appear to have been done. In addition, the quantities of manure produced and quantities applied are not documented. Instead, the number of households who were involved in the activity was recorded which says little about the intensity of composting on the farm. *It is recommended that in future monitoring, attempts be made to record the amount of compost produced and applied e.g. basins/baskets etc. Typically, farmers know this information, so it should not be difficult to compile and would be more meaningful than the simple existence of a compost pit.*

4.3.3.3 Water harvesting

Runoff is the major cause of soil erosion in the target communities as well as causing floods. Water gathers from hill slopes and rooftops to form large volumes of running water, which leads to the loss of valuable topsoil and the formation of gullies in the hillsides. To address this problem, the project promoted technologies for water harvesting to harness the otherwise destructive run off water for domestic use and crop production.

a) Ground water harvesting using trenches and ditches

Together with communities, the project has constructed water trenches and ditches on the upper slopes of terraces and these slow down the speed of running water and allows it to percolate into the soil. The ditches hold water within the topsoil of the alluvial layers that can be utilized by the crops. Sixty one per cent (61%) of farmers in target communities have attributed the reduction in soil erosion to the construction of water trenches according to the Final Survey Report for the project. This intervention has also helped raise the water table which has enhanced the yield of the water springs in the lower parts of the hill slopes. The water in trenches and ditches can also be tapped for irrigation of crops and vegetables in back yard gardens during the dry season.

During the field visit it was noted that this was a popular intervention for all groups and there is no doubt that farmers will continue the practice. They attribute the large increases in banana yields (from 3-4 clusters per bunch before to 8-14 clusters per bunch after the intervention), to the digging of trenches in cropped areas. However, currently the numbers of trenches per farm are being recorded rather than the length of trenches per farm. *It is recommended that the length of trenches be recorded in any future project activity. It was also noted that neighboring farmers (about 3-5%) are already copying the use of trenches, especially in banana plots, showing the impact of the intervention in the community even beyond the project groups.*

b) Roof water harvesting

The project promoted domestic water harvesting facilities such as water jars and brick masonry water tanks to harness rainwater from rooftops as a strategy to reduce runoff on steep slopes. Five brick masonry tanks and thirty water jars were constructed in the districts of Kabale, Kisoro and Ntungamo. Domestic water harvesting saves time especially for women who are responsible for fetching water, which is often from valley bottoms. For example in Kisoro district, Kanaba sub-county, the women in Gisasi village told the evaluation team they used to spend 2-3 hours everyday fetching water from a swamp but now Africare has helped them build a water tank. This valuable time is now saved and households are able to engage in more productive activities.

Field observations clearly showed that the intervention of Africare has improved the quality and availability of water for households. However, communities pointed out that tanks are expensive to use as they are made from cement. The tanks are used communally (e.g. situated at a church or school), while water jars are used at the household level. They also noted that jars are easy to replicate because they are cheaper but they lack the mould to construct them. The production of a water jar (materials and labor) costs from 250,000 – 300,000 Ug Sh, with a capacity of 20 jerry cans. They trap water for household use and also reduce the volume of water that would run down slopes and cause damage. *It is recommended that the project looks at the possibility of using plastic jars and tanks that might be cheaper, and also looks into the possibility of providing molds for the water jars. These interventions will also be useful in future project activities.*

The impact of the intervention to households is cleaner water and a huge reduction in the time and energy spent by women fetching water. This, in turn, means improved health of households, with women having more time to do other activities instead of collecting water from distant places.

c) Gravity water flow scheme

The construction of gravity water flow schemes was one of the strategies used to avail communities with water for both domestic and non-domestic use. The technology enabled a better distribution of excess water by allowing it to be distributed to points lacking water. For example, one 4 km gravity water flow scheme (Nyakishenyi gravity water flow scheme) that benefits about 5000 people was constructed in Rukungiri district. The communities identified a water source that had excess water run-off and worked with the project to direct this water into a 2 km high density polyester transmission pipeline and feed it into a 30,000 liter brick masonry cavity tank which supplies water to communities and schools in the area. Water user committees were formed to oversee the maintenance of the water system and ensure proper environmental mitigation measures for the water project. The water at the source was tested for counts of E. coli to assess its safety for domestic use and the in-take area was protected with a fence to avoid any contamination that would bring in pathogens.

4.3.3.4 Improved Cook Stoves

The 2002 baseline survey conducted by Africare indicated that the overwhelming majority of households (96.2 %) use firewood as the main source of energy for cooking. As a result, there is a huge demand for firewood, which puts more pressure on the already dwindling tree resources in these communities. The limited sources of firewood have forced most households to use crop residues as an alternative source of energy. This practice, however, is not sustainable as it leads to a serious depletion of soils due to nutrient transfer. The use of improved cook stoves is being promoted by the project to reduce fuel wood consumption. The project has been promoting the Lorena cook stoves, which are estimated to use 40% less energy as compared to the traditional three stone cooking stoves. This percentage reduction was confirmed during field visits by the evaluation team. A total of 1,079 cook stoves have already been constructed in the target communities, and the team noted that neighboring communities had expressed interest also in constructing such stoves.

As a result of this intervention, the number of people using improved energy cooking stoves has increased from 1.4 % at baseline to 14 % in Sept. 2005 (End-term Survey, 2005). The number of people using the energy-efficient cook stoves is much higher among Africare households (20.7%) than non-Africare households (6.8%) (Ibid).

The expansion of this activity was found to be restricted due to the lack of materials for construction (e.g. lack of the appropriate clay in the area) or absence of adequate kitchen space where they are to be constructed. *The project needs to facilitate this expansion of the intervention in the remaining period of the project as it has huge positive benefits for the household and the environment e.g. households quoted the reduced use of firewood (3 bundles of firewood per week instead of 7), cleaner food and improved health of the women because there is less smoke.*

Table 4.2 shows the implementation schedule of the above activities for the period FY02-FY0 06.

Table 4.2: Natural Resources Management Activity Schedule FY02-FY06

ACTIVITIES	FY02				FY 03				FY 04				FY 05				FY 06			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1.3.1 Plan and make seed and tree seedling orders for all target districts in collaboration with AFRENA/ICRAF for agro forestry promotion.	x		x		x		x		x		x	x		x		x		x		
1.3.2 conduct agro forestry workshops and farmer to farmer visit in the target districts of Kabale, Rukungiri, Kisoro Kanungu and Ntungamo	x		x		x		x		x				x			x				
1.3.3 Establish private and communal tree nurseries in Kabale, Rukungiri, Kisoro, Kanungu and Ntungamo districts.	x		x		x		x		x											
1.3.4 Carry out soil conservation activities for Kabale, Rukungiri, Kisoro Kanungu and Ntungamo districts.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1.3.5 Promote soil fertility improvement activities for Kabale, Rukungiri, Kisoro Kanungu and Ntungamo districts.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1.3.6 Promotion of improved energy saving cooking stoves.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1.3.7 Promoting rainwater harvesting for (non domestic use) and installing gravity water flow schemes for in Rukungiri and Kisoro districts.	x		x		x		x		x		x		x		x			x		x

Source: UFSI FY 02-FY 06 Title II DAP, 2002

4.4 Current Status of the Monitoring and Impact Indicators.

Substantial and impressive progress has been made towards achieving the NRM intervention objectives as shown in Table 4.3 that summarizes the progress made towards achieving the project performance targets. Progress on specific indicators is summarized below. Specific recommendations concerning indicators are discussed in section 4.4.2.

4.4.1 Impact Indicators

Impact Indicator 1.3.1: Area of land protected against soil erosion (number of hectares of Land conserved). As of September 2005, the project had conserved 1,550 ha of land against soil erosion using hedgerows, water trenches and stabilized bands. The constructed water trenches have also been stabilized with C*alliandra* and *setaria* grass. Out of the 2,000 hectares of land to be conserved by the end of the project, 77.5% had already been achieved. It is expected that this target can be achieved within the project period. This indicator is appropriate for measuring the impact realized in conserving the intervention area, *but it would also be important to compute the total length of the trenches constructed and stabilized in meters per hectare or kms. per square meter, as was recommended in the MTE* **.**

Table 4.3: Summary of NRM Component Performance

Nature of target	Base-line value	Target FY 05	Achieved FY 05	% achieved/ FY 05 Target	LOA Target	% achieved/ LOA Target
Impact indicators						
1.3.1 Area of land protected per environmental action plan (number of Hectares of Land conserved)	0	1,360	1,550	112	2,000	77.5
1.3.2 Number of metric tons of firewood						
harvested	0	2,560	2,159	84	6,720	32.0
conserved	0	700	1,175	168	800	146.8
Monitoring indicators						
1.3.1 Number of households adopting at least two improved land management practices.	0	3,000	3,378	112.6	3,500	96.5
1.3.2 Number of cook stoves constructed	0	1,370	1,279	93.4	2,000	63.9

Conventionally, the efficiency of conservation structures such as trenches and terraces is measured not only in terms of size but also in terms of spacing length across the slope. *It is recommended that such measurements be made in future activities.*

Data from the end-term survey show the changes in soil erosion over the life span of the project (Table 4.4), and clearly indicates the impact the project has had on soil erosion minimization. For example, the prevalence of soil erosion control has decreased from 78% at the base line in 2002 to 43% in 2005. This is clearly a positive impact of this intervention.

Table 4.4 Change in Soil Erosion Over the Life Span of the Project

Nature of the soil erosion trend	Status at 2002 (% age)	Status at 2005 (% age)
Decreasing soil erosion	7.2	18.0
Increasing soil erosion	89.3	12.8
Constant soil erosion	2.4	49.1
Prevalence of soil erosion	78.0	42.8

Source: UFSI-II Baseline Survey Report & UFSI-II End Term Survey Report

Impact Indicator 1.3.2 Number of metric tons of firewood harvested / conserved. The objective of this intervention is to significantly reduce the amount of fuel wood used for cooking at household level, by promoting the Lorena energy saving cook stoves. Reduction in the amount of fuel wood used therefore is indicative of the amount of wood saved. Because the energy saving cook stoves use 40 % less firewood

than the traditional three stone cooking stoves, a total of 1,175 of out the 800 metric tons of wood targeted by the end of the project had already been conserved. This is equivalent to 146% of the set target. However, as discussed below, the number of improved stoves constructed was only 64% of the set target, implying that these two targets were inadequately set.

The planting of agroforestry trees was one of the strategies to make more firewood available to participating households. As of Sept. 2005, 1,583 MT (83% of the FY05 target and 24% of the LOA target had been harvested, while the amount of firewood conserved was 1,175 MT (168% of FY05 target and 147% of LOA target). The low achievement of harvested firewood can be explained in large part by the delay in the commencement of agroforestry activities in UFSI-II due to difficulties in the disbursement of funds (discussed in Chapter 2). As a result, the majority of trees planted by the project have not yet reached the harvesting stage hence the shortfall in achievement. *It is recommended that NRM activities be extended for at least another 6 months in order to realize this target.*

4.4.2 Monitoring indicators

Monitoring indicator 1.3.1: - Number of households using at least two improved land management practices. This indicator measures the performance of the project by capturing the number of beneficiaries/households that have adopted at least two improved land management practices such as hedgerows, use of compost manure, use of improved cook stoves, trash lines, water trenches, bund stabilization using trees and improved fallows. Some 3,378 (96.5 %) out of 3,500 farmers targeted by the end of the project have already adopted at least two of the promoted technologies. It is apparent that this target will be reached by the end of project and possibly exceeded - an impressive achievement.

The team noted that this indicator could be improved by having prioritizing the most promising technologies adopted, rather than simply giving all the improved practices the same weight. *It is recommended that this be further reviewed in the next project.*

Monitoring Indicator 1.3.2: Number of cook stoves constructed. To reduce the rate of deforestation, communities have been trained to construct energy-efficient cook stoves that utilize less firewood than the traditional stoves. As of Sept. 2005, a total of 1,279 cook stoves had been constructed. While this is an impressive number, and is 93% of the FY05 target, it is only 64 % of the number targeted to be constructed by the end of the project.

The main reasons given by the farmers for low number of improved stoves constructed were the lack of appropriate clay material (e.g. in Kisoro district where much of the soil is volcanic) and, to a lesser extent, the small size of kitchens. *It is recommended that the NRM section facilitate groups to overcome these constraints in order to attain the project targets within the remaining period. For example, in Kisoro it is recommended that the feasibility of using the project's tipper to transport clay from nearby sites to those villages without clay be explored.*

Given the progress that has been registered so far, the NRM component will be able to accomplish most of the set targets by the end of the project. This impressive performance can be attributed, in large part, to the community participatory collective action approach. It is easier for members to work together as a community because they are able to share resources. This is particularly true of labor, which is much needed for technologies such as the construction of water conservation structures. Watershed byelaws, developed in a participatory manner by community members to address environmental problems, have also increased the rate of adoption of soil and water conservation technologies. *For those targets that need more time to achieve, an extension of at least 6 months is recommended this for component*

4.5 Mid-term Recommendations and their Implementation for NRM

Table 4.5 gives a summary of recommendations that were made during the MTE, their implementation and comments of the final evaluation team.

Table 4.5 Mid-term Evaluation Recommendations and Action Taken on NRM Activities

Recommendation	**Action taken/progress**	***Comment/remarks***
Manure production for fertility management should be integrated with raising farmers' awareness on the use of inorganic fertilizers since organic manure is unlikely to be produced in sufficient quantities and will not provide all the required plant nutrients.	Information on inorganic fertilizer use is currently being disseminated through the project.	
An additional monitoring indicator should be collected on the amount of organic manure composted and applied on farm (e.g. basin or basketful).	Not done.	*It is important that the amount of manure produced and applied on farm be collected and monitored. HH can be provided with simple forms for this. This could be done on a trial basis over the remainder of the project and incorporated into the next activity.*
Simple rain gauges should be installed in the watersheds and communities taught how to measure and monitor rainfall.	Not installed since they were beyond the project budget.	*Should be considered in any future activity, especially in eastern Uganda where inadequacy of rainfall is a problem.*
Storm runoff control ditches, and contour-bund and terrace risers are being constructed without following contour lines. These structures should be laid along the contour for the most effective control, and, Africare staff should train farmers how to use simple equipment such as the A-frame to lay the structures along the contour.	A-frame structures were constructed in the banana growing districts, although adoption rate is still low. Fanya ju and fanya chini technologies were promoted (methods of digging trenches where the soil is either placed below (Fanya chini) or above the trench (Fanya ju).	*Over the remainder of the project, it is important to promote the construction of trenches along contour lines using either an A–frame or Elgon design.*
Communities should be assisted to secure seeds of important tree species, especially C*alliandra* and *Grevillea* to raise tree seedlings, which are in severe shortage and needed to stabilize the conservation structures. Seedlings should be raised and planted by the community, covering up to at least 60% of the watershed and villages before project closes.	This is being done. Several tree nurseries have been established. Some households are adopting the technology as an income generating enterprise.	*Since NRM activities are seasonal, it is important that farmers have adequate seed on a timely basis. It is crucial that the project now purchase adequate seed for the remaining period. In addition, seed stands need to be established as soon as possible to help sustain the supply of seeds and enable the groups to earn income from the sale of seed.*

Recommendation	**Action taken/progress**	***Comment/remarks***
Farmers need continued support in growing temperate fruit trees (especially apples) beyond the lifetime of the project. This is a new enterprise and requires time for both the farmer and those involved in the technology transfer such as ICRAF/NARO to gain confidence on the viability and sustainability of the enterprise.	Support continued. Communities have registered with Sub/counties and are currently receiving support services from NAADS. In addition, some communities have received fruit tree seedlings to start enterprises.	*Field visits confirmed that most groups are already receiving support through NAADS on temperate fruit production in the area. This will continue since the groups are registered with NAADS. However, fruit mother gardens need to be established as soon as possible as this will help sustain the supply of fruit scions for the groups.*
Watershed management action plans should continue to be integrated into sub-county and district development plans. Cross-border issues such as bush fires should be addressed through suitable mechanisms such as cross-border community meetings. Africare should facilitate such meetings. In addition, more equipment for constructing trenches and ditches such as pick axes should be provided in difficult and stony watersheds such as that in Ntungamo.	Africare staff, together with an International intern, conducted policy advocacy campaigns to integrate watershed management action plans into the Sub-county and district development plans. The process is still underway. All communities were provided with tools to construct trenches. Cross-border meetings were not facilitated since these were beyond the available resources. .	*Africare needs to continue to promote the integration of watershed management plans into sub-county and district development plans over the remaining project period as this promotes sustainability of activities.* *District officials can facilitate cross border meetings rather than Africare staff. However, Africare should encourage this before closure of the project..*
In water catchments where Africare assists communities to construct gravity water schemes, communities should be encouraged to pay special attention to conservation activities that enhance and sustain sub-surface and ground water recharge. The project should facilitate communities to maintain the established gravity water schemes through proper planning and management to realize maximum utility.	Interventions in soil and water conservation were intensified in communities where the gravity water schemes were constructed. -Communities were trained in establishing water user and maintenance committees that collect a monthly water user fee; -Dramas have been staged (such as in Nyakishenyi) to promote community unity in managing development issues, including water management, water sanitation and other interventions. These committees also put in place byelaws and regulations on the maintenance and use of the water schemes.	*During the field visits the groups have already established user and maintenance committees and are already levying fees for water that is used.*
The integration of NRM with road construction should be strengthened. Road construction can disrupt natural resource processes through increased runoff and erosion. Mitigation	The project community mobilizer, and the NRM and Roads Sections have worked together and trained communities along the newly constructed Kanungu road in trench and check	*It was observed that, along newly constructed roads like those in Rukungiri and Kisoro many trees have been planted for stabilizing the road embankments. The communities have clearly*

Recommendation	Action taken/progress	*Comment/remarks*
measures identified during environmental impact studies were observed not to be well implemented, especially harvesting or safe disposal of runoff water from roads, and planting of trees, shrubs and grass on road embankments for stabilization.	dam construction. All communities along the road received sensitization training in tree/shrub planting as an environmental mitigation measure.	*understood their importance and the benefits to be derived from tree planting.*
The project should enhance interest and capacity in harvesting runoff water from roads constructed to control erosion and increase production. Besides directing it to trenches and ditches, the water could be stored for dry period irrigation or used for fish farming. Communities along the roads should be facilitated to raise enough tree seedlings and other planting materials (shrubs and grass) to stabilize road embankments along Africare roads.	In collaboration with NAADS, some fishponds were established along constructed Phase I roads. -Communities have been supported with tree seed, tree nurseries have been raised and transplanting is on going. Fish farming technology has not yet spread to the newly constructed roads but it is hoped that through the linkages with local government programs, more communities along the constructed roads will be reached and this technology will spread.	*Harvesting of run-off water is being done but on a limited basis. Further promotion over the remainder of the project strongly encouraged, especially for dry period irrigation and/or storage.* *Tree nurseries have been established but not in sufficient number to alleviate present severe shortage of seeds (especially calliandra). Further promotion over the remainder of the project strongly encouraged,* *Observations similar to those above apart from fish ponds. These technologies can be promoted through links with NAADS. In addition, the communities can seek support from Prime West, which is supporting fish farming.*
The team strongly recommended extension of the component for a period of two years to enable this highly successful intervention to be completed.	The project received an extension of 9 months and all NRM interventions continued normally in the communities.	*The final evaluation team recommends that the possibility of funding this for another 18 months be seriously considered to enable the NRM interventions to be fully understood and practiced by communities.*
Improve the access to potable water for all households making it available no more than 500 meters from their home by constructing wells, protected springs, small surface irrigation works and within the targeted villages, road water collectors for the gardens.	20 water tanks (of 10,000 liters) and 5 tanks (of 6,000 liters) each for 12 households were constructed in Kisoro district, 30 water jars (400 liters), a gravitated water spring and 3 communal tanks (10,000 liters) were constructed in Kabale and Ntungamo districts.	*Field visits showed that many water tanks and water jars have been constructed among project villages and more are expected.*

4.6 Comparison of UFSI-II Achievements in Relation to DAP Targets

Table 4.6 shows the summary of NRM performance compared to the DAP targets. The results of impact indicator 1.3.1 shows that the percentage of final survey report over the DAP target is 64%. However, the indicator does not fully capture the impact of water trenches constructed because, according to the same survey, 60 % of the farmers attributed the decline in soil erosion to these trenches. This shows the importance of capturing the spill over effects of the technology. This has been further discussed under section 4.4.2.

Table 4.6: State of the NRM Indicators at end of FY05

Target	Baseline	DAP Target	Actual at Mid-Term	Annual Report 05	% Achieved FY05Result/ DAP Target
Impact indicators					
1.3.1 Area of land protected per environmental action plan (number of hectares of land conserved)	0	2000	1143	1550	77.5
1.3.2 Number of MT of firewood: Harvested Conserved	 0 0	 6720 800	 454 620	 1583 1175	 23.6. 146.9
Monitoring indicators					
1.3.1 Number of households using at least two improved land management practices. *	0	3500	2398	3378	96.5
1.3.2 Number of cook stoves constructed *	0	2000	547	1279	64.0

* Final Survey Report Indicator 1.3.1 number was 3727; Indicator 1.3.2 number was 1269.

Impact indicator 1.3.2 has no % final survey over the DAP because, for example, the number of improved stoves does not give the amount of firewood saved because the time from the construction of the stove the time it has been in use was not calculated by the survey team. So it is not possible to calculate the amount of wood that has been conserved. This has also been discussed under section 4.4.2. For the monitoring indicators the figures reported by the final survey report are in agreement with those that were reported in the FY 05 annual report as shown in table 4.6.

4.7 Administration of the NRM Component

4.7.1 Component Funding.

Funding for the NRM component was administered through ECOTRUST, in a contractual agreement with Africare. The NRM activities were originally planned to last three years, but the contract between Africare and ECOTRUST was not signed until October 2002, a delay of one year, and giving only two years within which to implement the planned activities. Furthermore, the $1,500,000 originally budgeted for the component was reduced to $1,108,342. The MTE noted that fund disbursements had serious delays and were unpredictable, resulting in a loss of time and a backlog of activities yet to be implemented. The MTE strongly recommended that Africare explore means of obtaining additional

funds for the NRM component, and that there should be a two-year extension to enable the planned activities to be fully implemented.

Subsequently, an extension of 9 months was granted, and the funding closed in June 2005. There was no additional funding. During the extension period, all the remaining budgeted funds were received within a short period and were to be utilized immediately. The project management, therefore, spent most of the funds on purchases (e.g. vehicles) rather than on the NRM capacity building activities that had been planned, such as training in NRM technologies, but which would have taken time to carry out. From July 2005 up to now, NRM activities have been funded from the remaining UFSI-II project funds, especially from the agriculture component. This resulted in a much-reduced level of activity for NRM, but at least the on-going NRM activities have been implemented and supervised.

It is apparent that the period of three years planned for the NRM component was too short. Many of the technologies introduced were new to the communities, and time was needed for them to observe the benefits of the technologies and adopt them. For example, the practice of trenching and contour hedgerows stabilized with *Calliandra* and the adoption of composting needed time for communities to fully commit to their adoption and maintenance. In addition, the problems with the funding noted above seriously disrupted the implementation of NRM activities.

To enable sustainable results to be realized, the final evaluation team strongly recommends an extension to the NRM component of least 6 months beyond September 2006. A twelve-month extension would be ideal.

4.7.2 Component staffing

The NRM component currently has three technical staff members instead of the six in the original project design. It was to have one section head, two extension staff based in Kabale district, and one extension staff for each of the districts of Ntungamo, Rukungiri/Kanungu, and Kisoro. Three staff that left the project have not been replaced and this has adversely affected some activities, especially in the districts of Ntungamo, Rukungiri and Kisoro. There has also been a high turnover of NRM staff over the life span of the project, with two NRM staff and the section head leaving during the course of implementing activities. It is recognized that, given the limited time and resources remaining in the project, filling the three vacant posts is somewhat unrealistic. But the disruption to the NRM activities caused by both the funding and staffing issues needs to be acknowledged, and this further strengthens the case for an extension to the activities of the NRM component.

4.8 Lessons Learned

The following lessons have been learnt during the implementation of UFSI-II in respect to NRM activities:

- **Integration of development activities with NRM activities**

NRM is a long-term investment that takes time before realizing benefits. Typically, farmers are reluctant to adopt new technologies such as planting tree species as hedgerows along contour bunds. Integrating short-term income generating activities like bee-keeping and improved fruit tree growing can act as an incentive to encourage farmers to undertake those NRM interventions that take more time to show effect. *NRM activities are more effective when integrated with other development activities that are more easily embraced by the communities.*

- **Community participatory planning and collective action**

Participatory community collective action where all members on a particular landscape agree on actions to be undertaken to address environmental problems and collectively participate in implementing them has been very successful in implementing the project's NRM activities. Communities have also been able to formulate byelaws to ensure that every household implements the agreed activities. Collective action also reduces the cost of adopting certain NRM technologies. Results from the Final Survey Report indicate that the time to construct an improved cook stove is reduced by more than a half through community collective action. This, in turn, enhances the adoption of such technologies. *Community*

collective actions bind groups together and in the end enhance the ability of the groups to continue the activities beyond Africare timeframe, hence fostering the sustainability of such actions. It is very important that Africare continue this process in future activities.

- **Involvement of local governments**

The involvement of local government has been key to the successful implementation of the project's NRM activities. The sub-county local governments have been very supportive, particularly in helping beneficiary communities in their respective sub-counties to implement community soil conservation byelaws. This has ensured conformity by the majority of community members as well as increased adoption rates for improved land management technologies. *The involvement of local governments ensures that group action plans are integrated into local government plans and this ensures that support for groups continues to come from domestic programs such as NAADS. This is crucial to the sustainability of the activities.*

- **Watershed approach**

The watershed approach uses a water divide for demarcation of intervention area and is holistic in that it ensures that all households in the community living in a watershed adopt the interventions together. It is based on the principle that processes and problems in a watershed are so interlinked that one cannot adequately address each problem in isolation of others. This approach is a process rather than an activity, and requires time. It involves community participatory planning and collective implementation of action plans, where all members of a particular watershed agree on actions to address environmental problems and collectively participate in implementing them. *This approach has been the cornerstone for the impressive success realized so far in implementing NRM activities*.

- **Gender issues**

The establishment of soil and water conservation structures demands considerable labor input, and men mainly do their construction. As a result, the adoption of these technologies is low for female-headed households. Such households have to hire labor and that can be expensive. *When planning such interventions, gender issues should be considered seriously since it is most likely the women will be the ones maintaining and using these technologies, alongside all their many other responsibilities. In fact, the participation of women is a key determinant for the successful implementation of these interventions.*

- **Composting**

Land fragmentation affects the adoption of certain technologies, particularly the use of compost manure since transporting compost manure to different and often distant fragmented plots is very labor-intensive. *The fact that the benefits of certain NRM technologies can take time to realize can discourage farmers from adopting them, especially farmers with small and scattered land holdings.*

- **Linkages with other sectoral interventions**

A critical feature of the design of UFSI is the interlinkage between interventions e.g. between roads and NRM (planting of useful trees along road embankments to stabilize them); between agriculture and NRM (use of *Calliandra* stems for staking of climbing beans and use as fodder for animals); and between nutrition and NRM (construction of water facilities for provision of safe water for households, composting to provide manure for BYG and for better home hygiene, improved stoves enabling the cooking of more than one meal and also reducing smoke in the kitchen, and use of *Calliandra* fodder to feed rabbits). *These are all important linkages that are crucial to the project's excellent design. They should remain central to future food security programs of Africare.*

- **Choice of partners**

Field visit and visits to Africare's partners clearly indicated the importance of the choice of partners in implementing project activities. In this respect, Africare has been very successful and *it is a lesson they need to carry forward in future projects.*

- **Appropriateness and effectiveness of training**

The training of the groups in NRM technologies has been mostly through demonstrations. This was the approach used to introduce tree nurseries, raising tree seedlings, composting, trench and improved stove construction and it has been very effective. Moreover, Africare has used partners to train its staff rather than attempt to provide the training themselves. Such out-sourcing has brought competent people to handle different issues within Africare programs and this approach has been very effective in imparting skills to Africare staff, who then, in turn, train the farmers. *This approach has been very cost-effective and has worked well, but it also important for Africare to organize training for its staff in some core competencies such as tree seed collection and handling etc. This would be advisable in future projects.*

- **Funding**

Given the problems with funding described above, it is somewhat surprising that the NRM interventions have had such a positive impact on the management of natural resources in the targeted areas, and reflects the design and appropriateness of the interventions, as well as the high level of staff commitment. The funding problems, however, have had an adverse effect on certain project activities. For example, establishing tree nurseries is season-specific and needs to be done in time to have enough seedlings available for transplanting during the rainy season. This requires the timely release of funds for such activities, and, as discussed earlier, the shortage of tree seeds remains a serious problem. *The lesson learnt in this respect is that funding for NRM-related activities needs to be timely and predictable. Africare should fund future activities directly rather than through an intermediary.*

- **Appropriateness of monitoring and impact indicators**

The impact and monitoring indicators used have been mostly adequate. However, the indicators set were not able to capture the impact of all the technologies that were promoted under the section. In some cases targets set for closely related activities such as improved stoves and reduction in firewood use were not harmonized. *As noted earlier, the impact and monitoring indicators did not cover technologies such as water harvesting and composting adequately.*

4.9 Opportunities for Sustainability and Recommendations

4.9.1 Factors Promoting the Sustainability of NRM Interventions

The NRM interventions have several elements likely to promote sustainability after the project ends. These include:

- **Relevant and committed partners**

As noted in 4.2, currently there are several important partners that are promoting agroforestry practices in the region. These include ICRAF/NARO, Africa 2000 Network, Two wings Agroforestry network, and District environment offices. The continued commitment of these partners will help ensure that activities initiated by Africare will continue to be promoted after the project closes.

- **Interventions that address community needs**

The NRM interventions clearly address the needs of the communities. The magnitude of the soil erosion and damage caused by run-off water in the region makes the communities especially receptive to interventions as these occurrences directly impact their livelihood. It will, therefore, be in the communities' interest to ensure the interventions are continued. It is, however, crucial that before the project closes, communities acquire the necessary skills for planning and implementing these activities.

- **Community empowerment**

Cohesiveness of the community groups is one of the pillars for sustaining the NRM activities that have been initiated. The project has empowered communities in leadership and group dynamics skills to achieve this, and this will continue over the remainder of the project.

4.9.2 Recommendations

- **Strengthening linkages with local governments and other partners**

It is recommended that the project conduct community stakeholder meetings to review community work plan over the remainder of the project. Local government authorities and other relevant partners will need to be fully involved. The meetings should discuss the progress made by the communities in implementing their work plans and the strategies to continue with these activities during the remainder of the project and strategies for sustaining the activities in the future. These meetings should also advocate for continued collaboration between communities and local authorities in implementing NRM byelaws, and in linking up with NAADS and other key partners.

- **Empowering communities**

Continued strengthening of community groups and training them to write simple proposals for presenting to NRM development partners for funding is recommended over the remainder of the project.

- **Strengthening community-based tree seed production and distribution systems**

Having adequate tree planting materials (seed and seedlings) was identified at baseline as one of the challenges that constrain the adoption of agroforestry technologies. The project, therefore, has assisted communities to access planting materials for a number of tree species promoted by the project. To sustain this agroforestry practice, the project needs to strengthen community based seed production and distribution systems for agroforestry trees. This can be done by establishing more tree seed orchards where farmers can collect seed for their own use and also for sale to generate income for the groups. In addition, more fruit tree mother gardens should be established and the training of farmers in tree seed harvesting, processing and storage needs to be intensified. Communities should also continue to be linked to prospective seed suppliers where they can access tree seed. *For these activities to be fully achieved and sustained, an extension of the NRM component of the project is strongly recommended.*

- **Strengthening water maintenance systems for the constructed water facilities**

Community members have been and will continue to be trained in the general maintenance and repair of the water facilities that have been constructed. This will also involve the establishment and strengthening of the community maintenance fund. The gravity flow scheme in Nyakishenyi will be officially handed over to Rukungiri local government authorities so that they can assist the communities to maintain it. A *maintenance contract with local government that includes the communities will be needed to ensure continued community involvement and sustainability of the scheme. Efforts are also required to train more caretakers to maintain this and other schemes, and advocacy campaigns for enforcing water byelaws will need to be conducted, with the process backstopped by local government.*

- **Project component administration**

NRM component funding: The team recommends that in future, the funding of Africare activities be direct rather than through an intermediary as the experience of the NRM funding through ECOTRUST has shown. It caused unnecessary delays, resulting in under-achievement of Africare NRM planned activities and outputs. *In future, it is strongly recommended that the funding of Africare activities be direct rather than through an intermediary.*

NRM component continuation: *The evaluation team strongly recommends that NRM activities be continued for at least 6 months beyond September 2006 for reasons explained earlier. A twelve month extension would be ideal.*

CHAPTER 5: COMMUNITY ROADS

5.1 Problem Context

5.1.1 National Context of the Problem

The importance of having a road network connecting local, national and regional boundaries for transporting goods and services for a country's social and economic development cannot be overemphasized. This is clearly evident in the "Ministerial Budget Policy Statement" for FY 2005/2006, presented by the Minister of Works, Eng. John M. Nasasira to Parliament. In this statement, the Ministry's vision and mission statements are set out, and it is stated that the vision is " to have adequate, reliable and safe infrastructure in the transport, housing and communications sub-sectors that will deliver timely, quality, cost effective and sustainable services to the people of Uganda". The Government of Uganda thus seeks to promote suitable, resourceful, dependable and cost-effective transport and communication services.

There is a strong demand for roads to connect urban centers to the rural communities, and to deliver social services, technologies and information for development and for marketing produce. Roads are also needed to connect Uganda and other neighboring countries for commerce. According to the above-mentioned "Statement," the road network in Uganda is categorized into four major groups: trunk roads (or national/classified) measured at 10,500 km (tarmac/ gravel); urban roads measured at 3,500 km (tarmac/ gravel); district feeder roads measured at 27,500 km (mainly gravel) and community access roads measured at 30,000 km (gravel/ earth).

Maintenance of the feeder[14] roads is the responsibility of the Districts, while the community roads are the responsibility of the community. The Ministry of Works, Housing and Communications (MOWHC0), however, budgets some funds to maintain feeder roads, which it gives to the Districts to undertake this task. Community roads comprise about 46% of the total road network in Uganda but many are impassable for much of the year due to broken or blocked bridges and culverts. Improvised bridges built by communities are often poorly constructed and are either swept away by the rains or are not strong enough to allow passage of motor vehicles.

The transformation of subsistence farmers to more market oriented and commercial farmers through improved access to markets is one of the pillars of Government's Plan for Modernization of Agriculture (PMA), August 2000. The PMA also identified a well planned, designed, constructed and maintained system of community (rural) roads as one of critical pre–conditions for the modernization of agriculture .A similar emphasis was placed on rural roads development in the Poverty Eradication Action Plan (PEAP) 2001-2003. The PEAP noted that the poor condition of the Uganda's rural roads is a serious constraint to rural development and this is especially the case in the southwestern region.

5.1.2 Regional Context

In 1997 an estimate of the road network in Kabale was done by UFSI-I. The DAP for the UFSI-I estimated that in 1997 Kabale District had the following road network:

59 km of tarmac roads;

56km of class I murram roads (gravel, all weather);

642.8km of feeder roads, comprising of:

[14] Community roads are roads of limited capacity about 4 meters wide, which connect between villages or between villages and sub-counties. They are maintained by the communities. Feeder roads are roads have a bigger capacity with a width of not less than 6 meters. They connect sub-counties to the main district roads and are maintained by the districts.

268.1km class II murram roads (all weather),

180.7km class III murram road (not weather), and
194.0 km of class IV earth roads[15];
The length of village tracks (community roads) was unknown and most were impassable by automobile when the UFSI-I project started.

By 2003, after UFSI-I was completed and UFSI- II had started, Kabale District had the following expanded roads network:
59 km of tarmac roads;
56km of class I murram roads (gravel, all weather);
816 km of feeder road composing of:
268.1 km of class II murram roads (all weather);
353.9 km of class III murram/ earth roads (not all weather);
194 km of class IV earth roads; and
An unknown length of community roads.

According to the District Engineer, Kabale District has slightly over 1500km of feeder and community roads, though only 630km are motorable, and that is only during the dry season. The National Government does not budget any funds for the construction and maintenance of community roads. Neither the National nor Local Government budget any funds for training of those working on the construction or maintenance of community roads. Funds are only budgeted for the construction and maintenance of feeder roads.

As noted in the MTE report, the insufficiency of community roads has meant that large portions of the rural population in the region are completely secluded from major regional markets for much of the year. This is especially the case in the rainy season, when flooding and inundation of the roads is common. As noted above, the maintenance of the community roads is the responsibility of the local communities, but in fact, little road maintenance is done.

The steep slopes and the high rate of soil degradation from adjacent agricultural areas complicate community road planning, construction and maintenance in southwestern Uganda. Another complicating feature is the area's extremely high population density and land fragmentation, which exacerbate the normal problems of finding compensatory landholding for populations displaced by road construction. The land fragmentation makes it difficult to plan and construct a cost-effective road. For these reasons both UFSI-I and UFSI-II placed a high priority on the development of community roads.

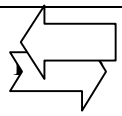
After the success of UFSI-I in Kabale District, UFSI-II expanded the community road activity to the districts of Ntungamo, Rukungiri, Kanungu and Kisoro. The project planned to develop 20 km of community roads per district, targeting 100 km. To date, 75 km out of the 100 km targeted in the DAP have been completed. Of these, 47 km of roads have been constructed and handed over for maintenance to the districts of Kabale and Ntungamo. The actual targeted road length differs slightly from that in the DAP reflecting the actual measurements of the planned roads taken by the road engineer which have differed slightly from that in the DAP (Table 5.1).

5.2 Partners
In the DAP it was envisioned that road building activities would make use of existing local district government equipment during construction as well as involve the district staff in the supervision,

[15] Class I murrum roads are trunk toads that connect to different district and administratvive centres, Class II murrum roads connect the major towns to other rural poduvtive centres anc clas III murrum roads connect the rural areas to maintrading centres withn the district.

mobilization and sensitization of the communities along the constructed road. As indicated below, this arrangement worked well. During construction, the project employed a highly participatory approach to

Figure 5.1 HOW AFRICARE COMMUNITY ROADS MAKE MIRACLES HAPPEN

 **Africare's road is built**	**Graphic Insert of people carrying an ill person on a stretcher**	**Graphic insert of vehicle carrying that person**	**After the road is built**
A ROAD IS LIFE!		**MAINTAIN IT WELL!**	

road construction in which the local communities have been fully involved in decisions on which roads to open and/or construct. The roads component successfully uses a range of partnerships in implementing activities. The most important are:

District Administrations.

Kabale District Administration: A total of 3 road segments were completed by the end of 2003, amounting to 25.3 km. These three road sections are:

- Nfasha-Kagoma via Mugyera 14.0 km.
- Kisanjye-Mugyera 5.0 km. and
- Kaharo-Nkumbura via Kasherere 6.3 km.

These have been handed over to the Kabale district administration for routine maintenance. As part of the district contribution, the district provided two dump trucks, which were used during construction. The District Engineer and Environmental Officer have been very helpful in providing supplementary supervision of the road works and in carrying out the Environmental Impact Assessment (EIA).

Ntungamo District Administration: In Ntungamo, a total length of 21.7 km was constructed. The two road sections constructed are:

- Ruhara-Rukanda 5.9 km.
- Rubare- Nyakaliro- Kyajere 15.8 km.

During the construction stage, the district contributed two dumper trucks and their driving staff. The District Engineer and Environmental Officer also participated in carrying out the EIA. The constructed roads have been completed and handed over to Ntungamo district administration for maintenance.

Kanungu District Administration: In collaboration with the Kanungu DLG, the project constructed the Rutenga – Kinaaba - Kiziiba road (20.7 km.) that ends at the Ishaasha stream over which a bridge was constructed by the project. Kanungu DLG leadership and technical staff actively supervised the progress of the work and contributed 3,800 pine and 3,900 Cyprus seedlings to the local people. These were planted alongside the road to help in its stabilization. The district also provided a dumper truck, which was used throughout the construction period and two motor vehicle chassis bodies that were used in the

making of the bridge at Ishaasha. In addition, the district technical staff participated in carrying out the EIA, in community mobilization, and in training the communities in soil and water conservation techniques and in road maintenance using labor-based techniques.

Table 5.1: Status the Community Roads Component as of Jan 17th, 2006

Road No.	Road Name/District	Planned Road Length in km	Road length completed	Remarks
1.	**Kabale District**			Completed, in all weather condition & handed over. The roads are currently being maintained by the use of petty contractors
a.	Nfasha-Kagoma via Mugyera	13.0 km	14.1 km	
b.	Kisanjye-Mugyera	5.0 km	5.0 km	
c.	Kaharo-Nkumbura via Kasherere	7.0 km	6.3 km	
	Total **(DAP target 20.0 km)**	**25.0**	**25.4 km**	
2	**Ntungamo District**			Completed, in all weather condition & handed over. The roads are currently being maintained by the use of 'road gangs'.
a.	Ruhara –Rukanda	5.9 km	5.9 km	
b.	Rubare-Nyakaliro	16.0 km	15.8 km	
	Total **(DAP target 20.0 km)**	**21.9**	**21.7 km**	
3.	**Kanungu District**			Completed, in all weather condition but not yet handed over.
b.	Rutenga – Kinaba - Kiziiba	20.7km	20.7	
	Total **(DAP target 20.0 kms)**	**20.7 km**	**20.7**	
4.	**Kisoro District**			The Ntebeko – Mgahinga road section is complete but not yet handed over, while the Murara – Foto – Muhangi road is still under construction ER conducted
a.	Ntebeko – Mgahinga	6.3 km	6.3	
b.	Murara – Foto – Muhangi	15.6 km	0	
	Total **(DAP target 20.0 kms)**	**21.9 km**	**6.3 km**	
5	**Rukungiri District**			Selected, EIA was conducted, submitted to USAID and NEMA all of which were approved
a.	Kacence -Nyakishenyi via Nyarugando	11.8 km	0	
b.	Buyanja - Nyakaina - Mineera	10.8 km	0	
	Total **(DAP target 20.0 kms)**	**22.6 km**	**0**	
	Overall Total	**112.1 km**	**74.1 km**	

Kisoro District Administration: There has been equally active participation in the road construction activities by the Kisoro DLG leadership and technical staff. The DLG leadership participated in the community mobilization along the roads before the start of the construction works and the technical staff participated in carrying out the EIA. They also provided two dumper trucks. Work on one road section, the Mgahinga – Ntebeko road (6.3 km.) is completed while the second, the Murara- Foto – Muhangi road (15.6 km.) is still under construction.

Rukungiri District Administration: The district leadership and technical staff, together with project staff, carried out the selection of the proposed road routes and carried out an EIA of both road segments: Kacence-Nyakishenyi via Nyarugando (11.8 km) and Buyanja-Nyakaina–Mineera (10.8 km). Construction of the Rukungiri road is planned to begin shortly

Private Sector Garages: One of the strengths of the project is its commitment to developing private sector partnerships and businesses. A local garage, Kabale Motor Garage (previously Bachu's garage) has provided equipmen,t repair and service in the Kabale district through a service and maintenance agreement for the project's cars and trucks used on the roads, while maintenance and plant service for the heavy equipment is being done by specialized engineers and technicians from Mantrac (U) Ltd and recently by Alpha General Enterprises. Motorbikes are also repaired by private mechanics in Kabale.

Another development has been the local sourcing of other essential materials used in road construction. The project procured the necessary gabions for roads construction from Portadome (U) Ltd instead of Terrain services since Portadome supplied better quality gabions at more competitive prices than Terrain services.

The project also obtained reinforced concrete culverts from local sources in Mbarara, which were used on the Kanungu and Kisoro roads. These innovations have greatly reduced the procurement time and costs, while at the same time have supported local businesses. All the products and services supplied are of good quality and have been at very competitive prices.

5.3 Evolution of the Project's Activities

5.3.1 Intervention identification process

Early technical stages of road construction: Before a road is constructed, Africare undertakes a road identification exercise, together with the district team. The district submits a list of proposed roads in priority order to Africare, which then makes a selection based on the following criteria:

- The roads must link inaccessible areas;
- The roads connect the targeted communities in other UFSI programs;
- The roads must be economically viable and feasible;
- The total road length is in accordance with the budget.

The road construction stage: Road planning and construction starts with a team including the Africare engineers, the District Environment Officer, the District Agricultural Officer, the District Secretaries for Production and Marketing and for Health and Environment. This team carries out an initial IEA on the selected roads. This involves:

- Meeting with the communities along the proposed road to discuss the road, to determine the negative and positive impacts of the road, and make recommendations to mitigate against any identified negative environmental impact;
- Submitting the EIA report to USAID and NEMA for approval;
- After obtaining USAID and NEMA approval, sensitizing the communities on road construction and maintenance, including the importance of growing of trees and shrubs along the roads. The staff also mobilize the road equipment to site;
- Asking the local communities to voluntarily harvest any useful vegetation along the road in preparation for road opening;
- Carrying out an engineering survey and preparing road designs and bridges;
- Preparing bills of quantities, procurement and delivery of supplies;
- Removing earth with a bulldozer to formation width of 5-6 meters, depending on terrain. Where it is rocky, a compressor and jackhammer are used. A motor grader is then used to shape the road to cumber, and the gravel is then compacted using a vibro-roller. After this, the drainage

team installs culverts in sections identified by the technical team. The engineer's team, helped by communities, installs bridges, if any, and culverts.

- Installing culverts (by Africare). These have been mainly ARMCO steel culverts of sizes ranging from diameter 600-1800mm supplied by M/S Terrain Services. However, good quality reinforced concrete culverts, procured locally, have been used on some sections of the roads in Kanungu and Kisoro. Headwalls and wing walls to the inlets and outlets of the installed culvert are then constructed using stone masonry. Also, where necessary, gabions, mattresses and boxes are used to construct simple bridges and stabilize the weak embankments. Grass, tree seedlings and cuttings are then planted along the constructed road by the communities and casual workers supervised by the roads supervisor.
- Identifying (by the engineer) sections that require gravelling (spot gravelling, after the completion of the road formation. The project then uses dumper trucks to ferry murrum from the closest sit available as identified during the initial survey and given free by the community as their contribution toward the road construction. The minimum gravel thickness after compaction is 100mm for areas with good road base and 300mm for soggy or swampy areas;
- The final step is handing the road over to the District authorities who select and contract road maintenance gangs on a competitive basis, and usually from among the local communities.

5.3.2 Interventions and activities under UFSI-I

Community road construction started in February 1998, through a collaborative effort between the project, Kabale District Administration and local communities. The intervention was piloted in Kabale district, and the district council selected a list of 19 priority community roads estimated at 120Km, though later after construction measured 163km. In selecting the roads, Africare gave priority to roads accessing villages that were to be included in other UFSI activities. The District also provided equipment and personnel. Unfortunately, the available machines were old, and broke down frequently, and the District administration also needed the same equipment to maintain other roads. As a result, the equipment was not available full time for Africare, slowing down substantially the pace of road construction.

In June 1999, Africare began negotiation to reallocate project funds in a way that would enable it to acquire its own equipment. USAID and Africare/W agreed to this reallocation. The first set of equipment (120H Grader and CS 355S Compactor) arrived in June 2000 and the second set (D5M Bull Dozer and 950G Wheel Loader) arrived in August 2000. Others, like the dump truck (Isuzu tipper) arrived later in October 2000. The arrival of this equipment enabled Africare to accelerate the rate of road construction that continued to be executed in strong partnership with the district administration.

5.3.3 Interventions and activities under UFSI-II

After the successful first phase, UFSI-II scaled up to include other four districts in the Southwestern Region. A total of 100km of road was planned to be constructed in the five district of Southwestern Region, with each district (Kabale, Rukungiri, Kanungu, Ntungamo and Kisoro) having 20km each. As noted above, when these road sections were measured by the engineer, it was found that, in fact, they amounted to 112.1 km., compared to 100.0 km in the DAP.

As under UFSI-I, the second phase adopted a highly participatory approach to road construction in which the local communities have been involved in the decision on which roads to rehabilitate, and in the construction and maintenance of the roads financed by the project. The road-building activities also continue to be executed in strong partnership with the district administration. This participatory approach has been extremely important in ensuring that the local communities as well as local government officials are fully on board and participate at all stages, including:

- Making the initial decision concerning the routing (selection of the places/points where the road is to pass) of the road;

- Obtaining the necessary right of the way, this where by communities allow the project to route (construct) the road through their land;
- Cutting trees and bush clearing during initial bush clearing of the way.
- Obtaining the basic road construction material, using mostly local materials;
- Constructing and rehabilitating the road and constructing and maintaining the anti-erosion measures needed to protect the roads.
- Providing equipment and drivers as available and as needed.

5.4 Current status of the community roads: Monitoring and Impact Indicators

5.4.1 Summary of Community Roads Activities

Table 5.2 Summary of Roads Component Performances

Indicator	Baseline Value	Target FY 05	Achieved FY 05 (Sept. 05)	% Achieved FY05	DAP Target Sept 2006	Achieved (Sept 05)/ End-term Target
Monitoring Indicators						
3.1 # km. of motorable road to GOU Standards	0	95	75	79%	100	75%
3.2 # km. of roads maintained by local government/ communities	0	80	47	59%	100	47%
Impact Indicators						
3.1 # new businesses/services along the upgraded roads by type	0	144	116	81%	180	64%
3.2 Average # of daily trips of autos & trucks on upgraded roads **Planting** **Harvesting**	 0 0	 11 15	 61 15	 555% 100%	 11 15	 555% 100%

A.3.a Impact Indicator 3.1: # new businesses/services along the upgraded roads by type.
Baseline Value: **0**
Targeted FY 06: 180
Achieved Final Evaluation (Sept 2005): 116

The opening up of roads has led to a most impressive emergence of new markets, schools, health centers and businesses along the road sections in all the localities. In Kabale, for example, there has been a huge increase in activities and settlements along the roads constructed under both UFSI-I and UFSI-II. Over 100 residential houses have been constructed, and a new primary school, a nursery, two clinics and one government health center have been established. Businesses have also flourished: two grinding mills have been set up, fish farming is now carried out alongside the roads, brick- and stone quarrying businesses now operate, plus several shops, including 5 groceries, 3 butcheries, 5 restaurants and 8 road side food stalls selling fresh vegetables and dry agricultural produce. Numerous local brew bars have started operation, and there are now 3 locations for weekly markets selling household items, farm inputs and local honey (which is also sold to vendors who travel to the now accessible area).

Table 5.3 Summary of Community Roads Activities Jan. 2002 to Jan. 2006

Activities	FY 02				FY 03				FY 04				FY 05				FY 06			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1. District Councils (Kabale, Ntungamo, Rukungiri, Kanungu and Kisoro) identify and select target road sections.	x	x	x	x	x															
2. Districts and Africare technical conduct reconnaissance and environmental reviews of sections as per NEMA/USAID guidelines.		x	x			x	x	x				x	x		x	x				
3. Carry out engineering survey, feasibility studies and preparation of road designs and bridges.		x	x	x		x	x		x	x			x	x			x			
4. Preparation of bills of quantities, procurement and delivery of supplies.		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
5. Road construction			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
6. Mitigation of environmental impacts along road sections			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
7. Training of local communities in road maintenance skills.										x				x		x	x		x	
8. Handover road to the district for maintenance.					x												x	x	x	x

In Ntungamo, the construction of the road has led to the establishment of two milk cooling centers, taxi and boda – boda transportation businesses along the roads, and has facilitated the transportation of the sick to health centers. It has also improved the access of agricultural produce to markets, including a periodic animal market. The people along the areas served by the roads have also embraced the practice of paddocking of their farms.

Along the completed Rutenga-Kinaaba-Kiziiba road in Kanungu district activity has also increased markedly. The following have developed: 104 new houses that operate both as commercial and residential premises, 2 grain mills in three markets places, 2 periodic markets, 2 dispensaries/clinics, 1 permanent structure staff house, and 1 nutrition school have been constructed and are operational. Other businesses include sand excavation, stone quarries and lumbering.

Another major achievement was the start of the construction of a new Wildlife Education and Visitors Center at the Mgahinga National Park by Uganda Wildlife Authority (UWA) in Kisoro district, funded by USAID Mission to Uganda. This was started after the opening of Mgahinga-Ntebeko road. On the same road section, boda-boda businesses now flourish. The upgrading of the road has reduced travel time from Kisoro town to the park by almost an hour and transport costs from Kisoro town to the park have been reduced from Ug Shs 9,000-10,000 to Ug Shs 5,000. Farmers are also benefiting directly. Potato prices, for example, have increased from Ug Shs 8,500 to Ug Shs 15,000 per bag as more buyers

compete for the produce. Large trucks are now able to access the potato growing areas of Muramba, which has given the farmers a direct access to the market for their product.

It is anticipated that by the end of the project (September 2006), additional new businesses will have developed along the project roads and especially after the construction of the remaining Kisoro and Rukungiri roads, it is expected that the target for this indicator will have been achieved.

A.3.b Impact Indicator 3.2: Average # of daily trips of autos & trucks on upgraded roads:

Planting season	**Harvest season**
Baseline Value: 0	**Baseline Value: 0**
Targeted FY 06: 11	**Targeted FY 06: 15**
Achieved Final Evaluation (Sept.2005): 61	**Achieved Final Evaluation (Sept.2005): 15**

To better evaluate the impact of the roads on farmers' activities, including both access to inputs as well as markets for their produce, traffic count data has been collected for two season: planting and harvest. Traffic surveys on UFSI-II roads indicated a large increasein both seasons in the number of bicycles and motorbikes on the completed roads. The number of autos (trucks and cars and pick-up trucks) per day on the completed roads of Kabale, Ntungamo, Kanungu and Kisoro roads during both seasons has also increased. The huge increase in traffic in the planting season may well reflect, in part, the transit traffic to Rwanda through Rubare – Kyajere road in Ntungamo.

The opening up of the Rutenga-Kinaaba-Kiziiba road made the once inaccessible areas in Kiziiba accessible by vehicles. Visitors and district school inspectors are now able to reach schools in the area and also the Kanungu local government officials can now reach local communities. In addition, local people can now use an ambulance to transport their sick to the hospital in Kanungu instead of the hand-carried stretchers used previously. The evaluation team met a local person who had bought a pickup car that is used daily on this road to transport people and goods to and from Kabale town. On the Mgahinga-Ntebeko road in Kisoro district, traffic has also grown well. Large trucks are now used to transport potatoes from the growing areas of Muramba to Kampala. The indicators do not include the volume of bicycles and motorcycles, but the evaluation team noted that the number of bicycles and motorbikes has also increased considerably.

A.3.c Monitoring Indicator 3.1: # km motorable road to GOU Standards
Baseline Value: **0**
Targeted FY 06: 100 km
Achieved Final Evaluation (Sept.2005): 75 km

In collaboration with Kanungu Local Government (LG), the project constructed the Rutenga -Kinaaba - Kiziiba road (20.7 km.). The project also built a bridge at Kiziiba on the Ishaasha River so as to link the Rutenga Sub County to Mpungu Sub County. The project carried out environmental mitigation measures such as planting of tree species to stabilize the road embankments, To supplement the project's efforts, Kanungu DLG contributed over 3,800 pines and 3,900 Cyprus seedlings, which have already been planted along the road.

This, is in addition to the constructed 25.3 Km of road in Kabale, consisting of Nfasha - Kagoma via Mugyera (14.0 km), Kisanjye-Mugyera (5.0 km) and Kaharo - Nkumbura via Kasherere (6.3 km) plus the 21.7 km of road in Ntungamo along Ruhara-Rukanda (5.9km) and Rubare - Nyakaliro - Kyajere (15.8 km). All the roads in Ntungamo and Kabale have been handed over and are already being maintained by the respective district authorities. In Kisoro, the Ntebeko – Mgahinga road 6.3 km was constructed and is already completed. A further 8 km has already been opened up along the Murara-Foto-Muhangi road in Kisoro district but is not yet motorable all year round since gravelling and the installation of culverts is not yet completed. It is expected that the target of 100 km will be achieved by end of project.

A.3.d Monitoring Indicator 3.2: #km roads maintained by local government/ communities

Baseline Value: 0
Targeted FY 06: 100
Achieved Final Evaluation (Sept.2005): 47 km (handed over to the districts)
During FY03, the project handed over three road segments in Kabale totaling 25.3 km to the district authorities for maintenance. These are Nfasha-Kagoma via Mugyera (14.0 km), Kisanjye-Mugyera (5.0 km) and Kaharo-Nkumbura via Kasherere (6.3 km). Kabale DLG has started routine maintenance of these roads using the GOU's Poverty Action Funds (PAF).

In Ntungamo, routine maintenance of constructed roads Ruhara-Rukanda (5.9km) and Rubare-Nyakaliro-Kyajere (15.8 km.) has already been started on using a method of 'road gangs', whereby the district pays community members along the road to carry out the works. It has also enacted byelaws (Ordinance 1: Ntungamo District Burungi Bwansi Ordinance, 2004), obligating communities to maintain community roads and water schemes with penalties in the form of fines if these laws are not observed.

The evaluation team met with Kanungu DLG officials including the Assistant Chief Administrative Officer, the District Executive Engineer and the LC5 Secretary for Works, who were all very enthusiastic about the road constructed and gave assurance that the constructed road would be routinely maintained by the district after it has been handed over.

To build the capacities of the local people in road maintenance activities, the project has carried out on-the-job training during road construction, and also trained them in soil and water conservation techniques, particularly the planting of trees alongside the roads.

A.3.e Other Qualitative Evidence of Impact.

As noted in the Final Survey Report (Dec. 2005), there is ample qualitative evidence in addition to the recorded indicators that the constructed road projects have had significant and lasting impact on the communities along the roads as well as on the surrounding areas. Such indicators include:

- Accelerated roadside settlements.
- New social services such as education and health centers.
- Introduction of new service providers such as those provided through NAADS as well as NGO's operating in the areas.
- Training local community beneficiaries in soil and water conservation technologies and imparting road maintenance skills to local communities. Such training has been done by a combined team of Africare staff and district officials and skills include masonry works, laying and placing of reinforced concrete and steel culverts and construction of gabion works.
- In Ntungamo, which is predominantly a cattle-rearing area, communal grazing practices have been changed in large part because of the new roads. Farmers have embarked on the fencing/ paddocking of their plots of land, which can reduce the spread of contagious animal diseases and promotes controlled grazing and hence improved animal production.

Photo

"*If you go to the communities along the road, there is increased paddocking (fencing) of the farms, people are planting other kinds of food, children are going to school, cooling centers are there, milk supply has increased and there is car and boda – boda business*" narrates a local farmer of Ntungamo district.

The construction of the roads has led to an appreciation of land value and a change in the tenure system in the area through which they pass. In Kanungu, in the areas served by the new roads, land rental prices per parcel have doubled while the purchase costs have almost tripled. The land tenure system in Ntungamo has also changed as a result of the intervention. Communal grazing of animals and communal ownership of grazing land is now rare. Farmers now prefer owning land individually, and are practicing improved animal rearing practices such as paddocking (fencing of farms) and construction of farms. This has reduced the spread of animal diseases, and undoubtedly resulted in an improvement in productivity. As in Kanungu, the price of leasing and purchasing land has increased sharply; both have doubled.

5.4 .2 Status of community roads activities at the time of the final evaluation

a) Status and activity on Kabale District Roads

The UFSI intervention of construction/improvement of community roads was piloted in Kabale district in 1998 under Phase I. After constructing over 163 km, the district leadership asked MOWHC to release road maintenance funds to protect the investment. The district currently uses the PAF funds to carry out routine maintenance of these roads.

UFSI-II constructed three road sections in the district: Nfasha-Kagoma via Mugyera (14.1 km), Kisanjye-Mugyera (5.0 km) and Kaharo-Nkumbura via Kasherere road (6.3 km) These roads were completed in 2003 and handed over to Kabale DLG in April 2004. Kabale DLG requested MOWHC to use PAF funds to maintain these roads. This was granted and in July 2004 the district authorities advertised for local maintenance tenders. When the final survey was done for UFSI-II in Sept. 2005, road maintenance activity was already underway.

The construction of the road has provided a useful income-earning activity for communities. The district pays community members who live along the road to carry out the maintenance. This system of "road gangs" has worked very well. Local people, mainly women, have organized themselves into groups and are sub-contracting for the routine maintenance of the newly constructed roads. According to the Vice Chairperson Kabale district, most of the participants in these road gangs are women. Through such work, women are earning money that has helped them and their families. The district has also enacted byelaws obligating communities to maintain community roads and water schemes. This is a good system that other districts are following.

As noted earlier, the expansion of economic and social activity along the constructed roads in Kabale District has been most impressive. Communities now have better access to health centers, schools and administrative centers. The people have also gained exposure to new technologies such as eco-san toilet facilities, which is being used at Kagunga Health Center II. Farmers have also benefited. The market and prices for their produce have increased enormously since their area is now accessible by vehicles. For example, in Kagunga village, farmers used to sell a bag of sorghum for Ug Shs 17,000, and now that the road is constructed, they can sell for Ug Shs 45,000 per bag. In addition, the demand for other agricultural produce such as cabbages, beans and potatoes has grown as market access has improved due to the road construction.

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"*We used the road to take my elderly sick sister to the hospital. Without it, she would have possibly died*" Evarista Twinobusingye, 51, evaluates its contribution to their life, "*we were able to get a taxi along the road and she was taken to Kabale hospital for treatment".*

"*I have used the money I got from road maintenance work to pay fees for my children and the rest to establish a cabbage garden*" says Mary Promise Tingiromwe one of the women contracted to carry out routine maintenance work on Kaharo – Nkumbura road.

b) Status and activity on Ntungamo District Roads

In July 2004, work on the following roads was completed and they were handed over to the district for maintenance: Ruhara-Rukanda 5.9 km, and Rubare- Nyakaliro- Kyajere 15.8 km. As in Kabale District, the constructed road length exceeds the 20km envisioned in the DAP, this time by 1.7km. Also as in Kabale, the district has established 'road gangs' in communities along the roads that carry out road maintenance. Many of the workers are women, and the system works well.

The roads have also had an important positive impact on family welfare. In what is predominantly a cattle rearing area, the roads in Ntungamo have helped raise the people's standards of living. Cattle are increasingly being fenced rather than graze freely, and this, in turn, has reduced the spread of disease among them. The new road access has also led to a large increase in the demands and supply of dairy products, especially milk.

c) Status and activity on Kanungu District Roads

In Kanungu, the road from Rutenga via Kinaaba to Kiziiba, measuring 20.7km, was constructed and ends at the Ishaasha stream over which a bridge was also constructed by the project. The road structures and mitigation measures have already been finished but the road is not yet handed over to district officials since it has a dead end. After Africare had started constructing the Rutenga – Kinaaba – Kiziba road, the Kanungu DLG started work on the two road sections Mpungu – Kiziba road and Kanungu – Kiziba road that were to link with the UFSI-constructed road at Kiziba, at Ishaasha bridge. Construction work on the district roads, however, stalled after the LGDP funds that the district was using were exhausted at a point 2km away from the UFSI-constructed road.

The Kanungu DLG recently requested UFSI/Africare to assist and co-fund the completion (opening and shaping) of this 2 km stretch. The district has pledged to contribute machinery (dozer, grader and dumper truck) all valued at about 15 million shillings towards completion. Africare's contribution is expected to would be in terms of technical personnel, fuel and lubricants for the machines as well as allowances for staff, which is valued at a total of about 9 million shillings. It is expected that, through this arrangement, the remaining stretch of road will be completed before end of project.

Along the road, tree species such as eucalyptus, pine, and cyprus have been planted to stabilize the road. At the time of the final evaluation exercise, the road was in good condition and the local beneficiaries expressed gratitude to Africare for the huge contribution to the area's development. There is clearly increased settlement and business activity along the road. Periodic markets, shops, bars, schools, clinics have been established. There is also increased traffic activity and the evaluation team was told of examples where the road has helped the sick to access better medical services in urban centers.

"*People have learnt a lot since the construction of the road. They have even started taking records of trees, prices and other things because now there is market for everything"* says the Chairman of Omuntuuro Cell, Mr. Bomugisha Pascal.

d) Status and activity on Kisoro District Roads

Originally, two road sections were targeted in Kisoro:

- Murara- Foto – Muhangiroad measuring approximately 15.6 km and
- Muramba – Bukazi road 5.0 km.

In order to link the various USAID funded projects in the area, it was agreed that the Muramba – Bukazi road (of 5.0 km) be replaced with Ntebeko-Mgahinga road (6.3 km) which leads to Mt. Mgahinga National Park where a Wildlife Education Centre is being constructed, as noted above. This has led to a win-win situation and provided easy access to the park After successful writing of the EIA's for both road sections and approval from both USAID and NEMA, construction of the Mgahinga – Ntebeko road is now complete but not yet handed over while work is still underway on the Murara – Foto – Muhangi road.

The project has not yet finished constructing all the planned roads in Kisoro district. The Mgahinga– Ntebeko road (6.3 km) has been completed, environmental mitigation measures such as installation of culverts and planting trees and plant stems along the road have been done, but the road has not yet been handed over to the district authorities for maintenance. This handover is planned to be done shortly Ongoing work on the Murara Foto Muhangi Road is expected to be completed by end of February, funds and weather permitting. When this work is done, a total length of 21.9km will have been completed, 1.9km beyond the anticipated 20km per district in the DAP.

As in the other districts, economic activity along the roads has increased sharply. For example, there has been a huge increase in boda-boda (motorbike) business. Both the time and cost of going by boda-boda from Kisoro town to the Mgahinga National Park have been reduced by half (with the time declining from 3 to 1 1/2 hours, and the cost from about Ug Shs 10,000-8,000 to Ug Shs 5,000 per person).

e) Status and activity on Rukungiri District Roads

Construction of the selected roads in Rukungiri is expected to begin in February 2006. The start has been delayed due to the late completion of the Kisoro and Kanungu roads. Two road segments, Kacence-Nyakishenyi via Nyarugando (11.8 km) and Buyanja - Nyakaina –Mineera (10.8 km), were selected.

"*We used to take about three hours from town to the park and back while nowadays it takes about one and a half to two hours*" says Habarurema Chris a boda –boda cyclist.

These roads lead to areas where there are other UFSI interventions. An EIA was conducted and the GPS level done as well as the budget. The EIA's of both road sections have received approval from USAID and NEMA. Three bridges will be constructed on the roads. Large and mature eucalyptus trees are readily available along the road, and could be used for cost-effective bridges, in conjunction with the abundant strong stones. The communities interviewed indicated their willingness to work with Africare and plant additional eucalyptus and other trees to secure the road.

5.5 Implementation of the Recommendations of the Mid-Term Evaluation

Table 5.4 Summary of the MTE Recommendations and Action Taken

Mid-Term Recommendations	Action Taken	Final Evaluation Observations
Administration		
Train staff in ACCESS, MS Word, Excel and AUTOCARD	Training in these programs scheduled for second quarter of FY 06. The engineer and his assistant will be trained in AutoCAD and Excel. The two technicians will be trained in MS Word and Excel.	Auto card program should be installed on the departmental computer. The computer will need upgrading to increase its capacity.
Staff professional training/obligations: Engineers &Technicians to join relevant professional bodies such as Uganda Institution of Professional Engineers (UIPE) & Engineers Registration Board as per Engineers' Registration Act. UIPE provides professional training.	One engineer is member of UIPE.	Remaining staff should also join.
Train the roads team for one week with NEMA on environment issues.	None	Difficult to arrange due to tight schedule of ongoing road works.
Cross cutting issues: Natural Resources Management		
Assist communities to secure seeds of important tree species, especially	Several tree nurseries were established. Some	Several tree nurseries have been established, but the

Mid-Term Recommendations	Action Taken	Final Evaluation Observations
calliandra and *greveillea,* for raising tree seedlings, which are currently in severe shortage and are required to stabilize of road base and the roadside slopes. Seedlings should be raised and planted by the community, covering at least up to 60% of the watershed and villages before project closes so that communities can to continue to green the watershed on their own. In particular, communities along the roads should be facilitated to raise enough tree seedlings and other planting materials to stabilize road embankments along the constructed roads.	households adopting the technology as an income generating enterprise. All communities were provided with tree seed, tree nurseries were raised and transplanting is currently on-going.	severe shortage of tree seedlings, especially calliandra, remains a real problem. It is recommended that, over the remainder of the project, an intensive effort be made to increase the number of tree seedlings provided to villages, and also too establish tree nurseries (as recommended in Chapter 4)
Strengthen the integration of NRM interventions with road construction. Road construction can disrupt natural resource processes through increased runoff and erosion. Mitigation measures identified during environmental impact studies were observed not to be effectively implemented, especially harvesting or safe disposal of runoff water from roads, and planting of trees, shrubs and grass on the road embankments for stabilization. This needs to be addressed	The project community mobilizer, the project's NRM and Roads Sections all worked together to train communities along the newly constructed road in Kanungu in trench and check-dam construction. All these communities received sensitization training in tree/shrub planting along the road as an environmental mitigation measure.	The Kanungu Road is a good example of integration of NRM and Roads interventions. This is a very good scheme, which should be replicated on other and future Africare undertaken roads. Future projects should also better address the harvesting or safe disposal of runoff water from roads.
Enhance the interest and capacity of communities along the constructed roads in harvesting runoff water from roads to control erosion and increase production. Besides directing it to trenches and ditches, the water could be stored for much-needed dry period irrigation or used for fish farming. .	In collaboration with NAADS, some fish ponds were established along the constructed roads (Phase I roads).	Fish farming technology has not yet spread to the newly constructed roads but it is hoped that through linkages with local government programs, and NGOs such as PRIME-West more communities along the constructed roads will become involved in this activity. Storage of run-off water should be more actively pursued in future UFSI activities.
Community Roads		

Mid-Term Recommendations	Action Taken	Final Evaluation Observations
Create small scale appropriate irrigation schemes utilizing water run off from culverts, in the form of; ▪ Trenches to farmers' gardens ▪ Water storage tanks/wells. Provide training of Africare staff and communities in the technologies involved in creating such schemes.	Communities were trained in the construction of trenches and check dams to utilize water run off for crop production.	The promotion of water storage tanks/wells was not widely done due cash flow problems of the monetization process. District staff should be encouraged to pursue this in conjunction with relevant NGOs and the NAADS program.
Scale up appropriate trees/shrub planting along the road by utilizing technologies/inputs (seedlings in particular) and funds from other partners, and from remaining project funds.	This was done in collaboration with beneficiary communities and local government forestry departments.	
Utilize available road equipment to help construct identified schemes of water irrigation, fishponds and storage facilities.	Not addressed due to inadequate funds and also not in the original approved project design.	To the extent feasible given the construction demands on the road equipment, this would be useful to incorporate into future projects.
Establish a research and development component that can access/download the technologies involved in such activities, and train staff in utilizing it.	Not addressed due to inadequate funds and time and also not in the original approved project design.	Consider budgeting for it in future activities
Train road staff and selected community members in the design, construction and maintenance of community roads using locally available resources. Liaise with other consultants and local government officials to obtain technical personnel and technologies.	In collaboration with Kanungu DLG, communities were trained in road construction and maintenance. More training is planned for Kisoro and Rukungiri Districts in FY 06.	Continue over remainder of project.
Where possible, the roads intervention should precede other interventions, so that access to these areas by the staff dealing with other interventions is secured.	Since UFSI has only one set of equipment and few staff, it was not possible for roads to precede other interventions. Also, by the time project staff had completed harmonizing the roads selection criteria with the DLG criteria, other interventions were already in progress	This was a good idea in principle, but proved difficult to manage in practice for reasons given.
Create programs for roads supervisors to carry out sensitization and training	This was done and will continue until the Project	This should continue.

Mid-Term Recommendations	Action Taken	Final Evaluation Observations
programs on road maintenance in close collaboration with the NRM and agriculture interventions and staff.	LoA	
Prepare an Africare Community Roads Manual. This can be done through in-house training, so that all relevant staff take part in the process, which involves: ▪ Production of typical designs of bridges, culverts, cross sections etc, which are typical on community roads; ▪ Specifications of the same; ▪ Format for the simple Bill of Quantities and actual costs; ▪ Project management and control systems; simple supervision and maintenance techniques. The Manual would be the section's resource book for simple, pertinent technical and mgmt. info. Simplified versions/booklets of the Manual would be translated into local languages.	Development of Africare Community Roads Manual was initiated internally by project staff, but progress limited due to competing demands on staff time.	Preparation of a Manual should be pursued, if time and funds permit. Such a Manual would also be of use in future Africare projects. The budgetary implications of its preparation should be explored, as should the use of ICG funding from FFD. Africare can outsource consultancy to work with the roads department in the preparation of the Manual.

5.6 Lessons Learnt

Under UFSI-I, the construction of community roads made good progress. Under UFSI-II, this progress has continued, and in some ways exceeded the earlier phase due to analyzing and evaluating the strengths and weaknesses of UFSI-I and learning lessons. Although many of the roads are in place and have been generally well constructed, the evaluation team proposes some improvements to strengthen future interventions in this component. These include:

- Budgeting to provide adequate staff and training in appropriate rural road construction and maintenance practices.
- Increasing the sensitization of communities and partners on the need to "clothe" roads with trees and shrubs. The increased effort by project staff to do such sensitization has paid off. More trees and shrubs are grown along the Kanungu and Kisoro roads, which safeguard the integrity of the road, and provide income to farmers owning plots adjacent to the road. There is, however, a need to develop this practice further. With the agreement of communities, more trees should be planted alongside the roads. The NRM component can work with the roads section to continue to promote the growing of appropriate trees and shrubs along the roads. Communities are most willing to learn, so long as the extension workers deliver the messages appropriately, and the supply of tree species is adequate.
- Digging trenches and promoting the trenches to stop soil erosion and hold water for irrigation should be given even more emphasis since these interventions provide a good lesson on how the water run off from roads can be treated to the benefit of communities. Such run-off can become water for production by creating simple small-scale irrigation schemes.
- Utilizing the trenches more by using it for other relevant project component. For example, to build community fish ponds, water-retaining dams etc. It is essential, however, that the road equipment stays in the districts until all the planned project roads are completed.
- Unpredictability in the flow of monetization proceeds caused considerable delays on the road construction in Kisoro and Kanungu, which have, in turn, delayed the Rukungiri program.

- The considerable achievements of other project components as soon as the road is constructed indicate the importance of this component to the people's livelihoods. A Road is Life!

5.7 Opportunities for sustainability and exit strategy

As Africare contemplates the closing of UFSI-II and initiating a similar project elsewhere in Uganda, it is important to have a well thought out exit strategy to ensure the sustainability of the project's activities. There are several opportunities to sustain the community roads programs.

At the planning and design stage: This is the stage at which technical staff, social scientists, Government officials and the communities consider the community roads to be planned, upgraded or constructed. To promote sustainability, the following is recommended:

- Facilitate the establishment of road construction and maintenance committees *at the parish level*. This early empowerment of the local communities will enhance the need for the communities to see the roads as truly theirs and thus mobilize other communities to become involved as needed;
- Train the communities in community road maintenance and environmental mitigation measures:
    - Planting appropriate trees and shrubs along the roads for economic gains and to secure the roads;
    - Building drainage culverts to divert the run off water into trenches, thereby reducing soil erosion. The stored water can be used for simple irrigation and other uses.

Local leaders may approach the DLG officials, who should supervise and connect the local communities with relevant NGOs and partners in development for facilitation and incentives.

At the maintenance stage:

- Train communities along the road in community road maintenance and in bidding for road work' contracts. This earning power will consolidate the feeling of ownership of the road and the desire to maintain it. There are competent groups that can undertake these bids, especially women.
- Train identified members of communities and equip them with basic tools and equipment for community roads' maintenance as well as in business and organizational management skills. This will go a long way to ensuring sustainability of the roads. The trained community members will have a better opportunity to obtain district advertised maintenance jobs. Moreover, with increased skills, they may start building small-scale irrigation schemes by harvesting the rainwater and utilizing gravity, wind power and other sources of energy.
- Provide training certificates to workers who have received on-the-job training in road maintenance and environmental mitigation measures. Community local leaders can be advised to arrange this through the DLG officials who will be able to coordinate with other relevant Ministries to provide the needed expertise, such as labor-based training on road maintenance by the Ministry of Works, Housing and Communications and vocational training skills by the Ministry of Education.

5.8 Recommendations

5.8.1 Recommendations A: Recommendations in Table 5.5 are at a no-cost basis i.e. assuming the project is extended but continues using available funding:

Table 5. 5 Recommended Actions for Community Roads

No.	**Issues**	**Recommendations**
1.	Closer integration of roads and NRM components.	Planting trees and shrubs along the roads should continue being emphasized as a pre-condition for constructing/upgrading the roads. Within available resources, scale up appropriate

No.	Issues	Recommendations
		trees/shrubs planting along roads.
2.	Use of accurate technical methods to measure distances of roads to be upgraded e.g. the estimated roads in Rukungiri and Kisoro.	Ensure accurate technical information as the basis for the remainder of the road construction. There is need to buy distance measuring equipment such as the pedestrian meter (true meter).
3.	Adequate time to be spent by roads supervisors (technical extension agent) after completion of the road to train and sensitize communities on the technologies and value of road maintenance.	Create programs for roads supervisors to carry out sensitization and training programs on road maintenance in close collaboration with the NRM and agriculture section staff, community mobilizer and district staff or related disciplines. Such programs would also be of use in future activities.
4.	An Africare Community Roads Manual is needed. This would be the section's resource book for basic technical and mgmt. information that ensures correct measures and control systems for the planning, design, construction and maintenance of community roads. Without such a manual, money and time may be wasted by not applying simple but tested techniques of design, construction and supervision, using locally available materials.	Prepare such a manual. This can be done in an organized in-house training so that staff assist in compiling and are in agreement with it. It should have: ▪ Simple typical designs of bridges, roads, cross sections etc typical on community roads; ▪ Specifications of the same; ▪ Format for the simple Bill of Quantities and actual costs; ▪ Project filing and control systems; ▪ Simple supervision and maintenance techniques. If possible, it is recommended that this be done by accessing ICB funding from the FFD.

5.8.2 Recommendations B: The recommendations for the roads components of any new project are set out in Table 5.6.

Table 5.6 Recommended Actions for Community Roads in a New Project

No.	Issues	Recommendations
1.	In UFSI-II, the formulating and enforcing of byelaws promoted cohesion and compliance by community members in implementing interventions on roads, water and sanitation, and other NRM activities. The approach became so popular that it attracted the involvement of local govt. leaders who became supportive of the interventions, thereby fostering cooperation between communities and the Local Govt.	Encourage the new communities and District officials to set up similar bylaws on roads, water and sanitation, and other NRM activities. As with UFSI-II, this can encourage group cohesion and compliance in implementing and managing the interventions.

No.	**Issues**	**Recommendations**
2.	In the Kisoro Mgahinga road, a partnership between the Uganda Wild Life Authority, the community and Africare is being sought. The Mgahinga/Bwindi Impenetrable Forest Conservation Trust (MBIFCT) is being requested to contribute funds to maintain of the road, which, by reducing halving the time needed to gat there from Kisoro town, encourages tourists.	Once a community road has been select for construction or rehabilitation Africare should seek possible partners, who may directly or indirectly contribute towards the cost of construction or maintenance.
3.	Closer integration of roads and NRM components needed. In particular, appropriate trees and shrubs should be grown along the roads.	Planting trees and shrubs along the roads should be a pre-condition for their construction or upgrading, and appropriate byelaws may be needed. Ensure adequate supply of tree seedlings and give adequate time and support to the devt. of tree nurseries.
4.	Some road equipment spares, supplies and materials were not procured on time. This led to delays as equipment was grounded or road works halted, awaiting repairs and procurement.	Prioritize funding, to ensure that needed road equipment and supplies can be procured on time. Factor into the planning and budgeting the fact that the monetization process can be unpredictable in both amounts of funds forthcoming and their time of arrival.
5.	Accurate technical methods needed to measure road distances to be upgraded.	Ensure accurate technical information as the basis for the road construction. Provide a total station, GPS and a pedestrian meter for the department.
6.	Roads supervisors (technical extension agent) need to spend an appropriate time after completion of the road to train and sensitize communities on the technologies and value of community roads maintenance.	Create programs for roads supervisors to carry out sensitization and training programs on road maintenance in collaboration with local district officials, the NRM and agriculture related interventions and staff.
7.	Maintenance of the roads upgraded or constructed by the project is crucial. The capacity of district officials to do this has become increasingly difficult now that the graduated tax has been abolished and local govts. have no alternative source of revenue.	To the extent possible, district officials should maintain these roads. This has, in fact, been the case on the UFSI-I and II roads, where district authorities have generally maintained the Africare roads well. Africare should make it a pre-condition to the district officials to immediately start maintaining the upgraded roads. The project should also give adequate training to the beneficiary communities to maintain these roads.
8.	Internal and professional training is needed for capacity building and to conform to the professional legal requirements	Internal training with AutoCAD for engineers & technologists, MS word and excel for technicians and all to join Uganda Institution of Professional Engineers for professional training and to conform with the law.

No.	**Issues**	**Recommendations**
9.	An Africare Community Roads Manual is needed. This would be the section's resource book for simple but pertinent technical and management information that ensures correct measures and control systems are of the planning, design, construction and maintenance of the community roads. Without such a manual, money and time may be wasted by not applying simple but tested techniques of design, construction and supervision, using locally available materials.	Prepare such a manual. This can be done in an organized in house training, so that staff assist in compiling and publishing it. It should have: ▪ Simple typical designs of bridges, roads, cross sections etc typical on community roads; ▪ Specifications of the same; ▪ Format for the simple Bill of Quantities and actual costs; ▪ Project filing and control systems; ▪ Simple supervision and maintenance techniques. It is recommended that this be done by accessing ICB funding from the FFD.

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CHAPTER 6 – NUTRITION

6.1 Problem context

6.1.1 National context

Despite favorable food production conditions in Uganda, successive demographic health surveys have all shown no improvement in the country's nutritional status and in some cases it has declined as shown in Table 6.1. This is in sharp contrast to the appreciable gains in economic growth the country has experienced for over a decade (MFPED, 2001[16]). Indeed, Uganda is one African country that has been highlighted as meeting national food supply needs, yet a large proportion of children still remain under-

Table 6.1 National Malnutrition Rates of Children Under Five Years of Age

Childhood (less than 5 years of age) Malnutrition Rates (% < -2SD)			
	1988/89	**1994/95**	**2000/01**
Stunting	45	38	39
Underweight	25	26	23
Wasting	3	5	4

Source: Uganda Bureau of Statistics and ORC Macro, 2001[17]

weight (Benson and Palmer, 2004[18]; Benson and Satcher 2004[19]; FAO, 2004[20]).

Malnutrition has remained a major public health problem in Uganda, especially among the under-fives and women of reproductive age. According to the Uganda Demographic and Health Survey (UDHS) (2000/01), 39% of the under-five population are stunted, 23% are underweight while 4% are wasted. These high levels of malnutrition have a negative impact on the general survival, body immunity, educability, growth and development of under-five children in the country.

Micronutrient deficiency disorders has been increasing in Uganda and those of public health significance are Vitamin A Deficiency (VAD), Iron Deficiency Anemia (IDA) and Iodine Deficiency Disorders (IDD). A demographic and health survey carried out by the Uganda Bureau of Statistics (UBOS) in 2000/2001 noted that 28% of children in Uganda below 5 years of age suffer from VAD and the total VAD prevalence rate is 5.4%. In addition, 64% suffer from IDA and 60% suffer from various IDDs. The total goiter rate ranges from 60-70%. Moreover, 52% of women in the reproductive age suffer from VAD and 30% suffer from IDA (UBOS, 2000/01).

6.1.2 Regional context

The southwestern region of Uganda has a favorable climate and generally good soils for crop and animal production. The region should be able to produce sufficient food production for its population. Yet high rates of malnutrition and of nutrition impacting diseases as well as general poverty prevail. Inadequate knowledge of and time for childcare and poverty have resulted in several manifestations of malnutrition (Table 6.2).

To help communities build capacity to deal with malnutrition, AFRICARE/Uganda pioneered a comprehensive food security initiative in Southwestern Uganda. Activities started in Kabale District in

[16] Ministry of Finance Planning and Economic Development, 2000/01. Uganda Poverty Status Report.
[17] Uganda Bureau of Statistics and ORC Macro., 2001. Uganda Demographic and Health Survey, Kampala.
[18] Benson T., and Palmer T., 2004. Crossing boundaries to reduce malnutrition? An institutional study on Agriculture and nutrition in Uganda, Mozambique and Nigeria. Report submitted to ICRW under the Agriculture Nutrition advantage project, Washington DC. International Food Policy Research Institute.
[19] Ibid.
[20] FAO, 2004. Incorporating nutrition considerations into the development policies and programs, Rome.

1997 under UFSI- I before expanding to the surrounding districts of Kisoro, Ntungamo, Rukungiri and Kanungu under UFSI-II in 2002.

Table 6.2: Comparison of National and Southwestern Region Malnutrition Rates

	National	Western Region
Stunting	39	47.8
Underweight	23	23.7
Wasting	4	4.3

Source: Uganda Bureau of Statistics and ORC Macro 2001

6.2 Evolution of Project Activities

6.2.1 Intervention Identification Process

Both phases of the UFSI program undertook a multidisciplinary participatory rural appraisal (PRA) approach, involving all relevant stakeholders (beneficiary communities, district local government staff and community level organizations). The project focused on household food and nutrition problems for which long-term sustainable solutions could be identified. Such problems included inadequate dietary intake due to poor crop yields, high incidence of diarrhoeal diseases, poor feeding practices and lack of safe water supplies It was concluded that village/community-based education and training, particularly targeting mothers and children, would be the best way to address these problems of malnutrition.

6.2.2 Interventions and activities under UFSI-I

The nutrition intervention under UFSI-I started in August 1999 with the aim of improving the nutrition and health status of the communities. To achieve this objective, activities in appropriate feeding practices, hygiene and sanitation education, as well as growth monitoring of children below five years were initiated. Altogether, 106 villages were targeted in 12 sub-counties in the Kabale District. At the end of the project, it was recommended that the nutrition activities in these areas be carried over into UFSI-II.

6.2.3 Interventions and activities under UFSI-II

UFSI-II implemented the same nutrition activities as in UFSI-I, and extended coverage to other sub-counteis in Kabale District and in Ntungamo, Kisoro, Rukungiri and Kisoro Districts. The objective of the UFSI-II nutrition activities, as conceived in the DAP[21], was to improve the household utilization of nutritious food, particularly for women and children under 5 years old. The main interventions are as follows:

a. Nutrition, Health and Sanitation Education:

The project set up community-based nutrition education centers where nutrition and sanitation education sessions are held. At these centers inappropriate nutrition and sanitation practices are discouraged and appropriate practices promoted in a participatory and interactive two- way communication. Nutrition topics covered include the following:

- Causes, signs and symptoms of malnutrition
- Meal planning and balanced diets, food preparation, food nutrients, their importance in the body and their food sources,
- Feeding of vulnerable groups,
- Breastfeeding, preparation of weaning foods, complementary feeding
- Family planning as a health and nutrition practice
- Immunization.

[21] UFSI-II DAP, page 23.

HIV/AIDS, being a cross cutting socio-economic problem, is also covered in these sessions to help the communities cope with the disease. The importance of the extra nutrient needs for people living with HIV/AIDS is emphasized.

Practical cooking demonstrations are also routinely held for beneficiaries to have hands-on experience of preparing different dishes intended for different categories of people. These demonstrations emphasize the need to prepare meals that meet the dietary needs of individuals in the targeted household in quantity and quality. The foods used are sourced locally. The intention of this intervention is to emphasize to communities that they can balance their diets using locally available food items.

During the initial stages of UFSI-II, community members would gather once a month to attend a teaching session by Africare staff. This proved a heavy burden on the project's extension workers. So the staff, in collaboration with the district directorate of health services, trained volunteer mothers and district community health workers in the basics of nutrition to help boost Africare staff efforts and ensure sustainability. Under the same collaboration, Africare and the District Directorates of Health Services in all the target districts jointly support and guide the resource persons. They make their own schedules with communities, move from house-to-house supervising and guiding members in sanitation and basic hygiene a well as providing cooking demonstrations in the kitchens of participating mothers.

The above interventions have helped beneficiaries understand the importance of adequate nutrition and sanitation practices and the adoption of the practices has increased. Collaboration with local community leaders has been extremely important. Local community leaders have helped enforce the adoption of good sanitation practices. Some communities have formulated bylaws to govern proper pit latrine construction and use, plate drying racks establishment, compost pit construction and proper household hygiene. Consequently, the end term survey results show that there has been a huge improvement in sanitation in the targeted villages. For example, 96% of targeted households now have a pit latrine.

b. Child growth monitoring and promotion:
This activity started in the second quarter of 2001 and covered the 106 villages of UFSI-I and 103 villages of UFSI-II. A total of 7,218 children under-five years of age have registered in growth monitoring and promotion in all the villages covered (3,235 children from UFSI-I and 3,983 from UFSI-II villages). In addition, 185 community-based growth promoters (GPs) have been trained under a collaborative arrangement with the central government's Ministry of Health and district health officers. It is planned that a further 41 community-based volunteer child growth promoters from FY 04 and FY 05 villages be trained in FY 06. This will bring the total number of volunteer mothers to 226 in the project area. Africare's nutrition staff check the records at the community weighing centers. The GPs under the supervision of the nutrition extension workers identify children at risk and offer counseling to the mother as in the story below. Severe cases are referred to health units for therapeutic care. Refresher courses in growth monitoring and promotion are held for the GPs on a quarterly basis.

c. Dietary micronutrient supplementation

- **Dark Green Leafy Vegetable and Fruit Promotion:**

Diet and food-based approaches play an essential role in preventing micronutrient malnutrition by increasing the availability and consumption of micronutrient-rich foods. The project has emphasized strongly the importance of the communal and household backyard vegetable gardens (BYGs). These BTGs grow mostly vegetables and are an important way to increase the production and consumption of micronutrient-rich foods. This will, in turn, improve the micronutrient status of the targeted communities, since the family primarily consumes produce from home gardens.

Mr. & Mrs. Tumuhimbise Rwabaganga are participants in the UFSI-II program. They live in Rwempazi village in Ibumba parish, Rwamucucu sub-county in Kabale district. As the two were headed for a burial ceremony in a neighboring sub-county on Dec. 14th, 2003, they noticed what looked like a bundle of clothes dumped on the roadside. Inside the clothes they found was a baby girl, abandoned. Her name was Angela. They reported this to the police. They didn't have enough money to go through all the bureaucratic government procedures that they were advised to follow so they decided to adopt Angela. This was not easy, but they were very determined. The foster mother tried to wet-nurse the baby, but she was not successful. " *I took several cups of local herbs to help me rejuvenate my breast milk flow but unfortunately it didn't work, so I decided to use cows milk*" When this village became part of Africare's program in 2005, the Nutrition Training Agent noticed that this child was malnourished and severely wasted and needed urgent special help. Angela was less than 60% of the normal weight for her age. The agent taught the foster mother how to prepare enriched meals for Angela but also referred the child to Rugarama Health Center. Africare staff provided transport and paid admission fees for the child. When she was admitted at 24 months, Angela weighed 8.0 kgs, again less than 60% of the normal weight for her age. Project staff kept on checking and encouraging her while in the hospital. After 3 weeks, she was discharged and weighed 10.5 kgs. – 80% of the normal weight for her age. The foster mother prepared the child multi-mix diets with help from Africare staff and a volunteer growth promoter. After two weeks at home, Angela's weighed 11.9 kilograms and is now thriving and healthy. The foster mother could not hide her appreciation. "*I heartily thank Africare. I had almost lost hope because Angela's life was gone. I was taught how to prepare meals for her and she can now play with the rest of my family and she is strong. I know Angela will grow into a big girl and will be successful in life", says Mrs Rwabaganga.*

The agricultural component of the project pr omotes communal nurseries where farmers are trained in agronomic practices of horticulture. Indigenous vegetables such as *Amaranthus cruentus*, *Amaranthus hybridus, Amaranthus dubius, Solanum nigrum, Solanum anguiivi, and Solanum aethiopicum* are promoted. These are locally available, culturally acceptable, disease/pest/drought resistant, have longer harvesting periods and above all, are nutritionally sound. From the communal nursery, the vegetable eedlings are shared among group members to grow in individual households. Africare nutrition extension staff continue guiding the farmers on the management and utilization of these crops at the household level.

The NRM component of the project promotes the planting of fruit trees including avocado, mango, oranges and apples. In addition to providing incentives to farmers adopting the natural resources practices because they take relatively short time to harvest, they also improve access to micronutrients for the households.

Under UFSI-II, an estimated total of 27,512 individual BYGs were established and maintained. From these gardens, an estimated 153,140 kgs of vegetables have been harvested and consumed primarily by the beneficiary households.

The communities visited during the final evaluation emphasized that vegetables are no longer considered "a poor man's diet" or "lean season's relish" or "last resort dish". The women are now well aware of the beneficial value of vegetables, and stressed the importance of including vegetables in their children's meals. This was confirmed by the end term survey results, which showed that 78% of households surveyed consumed vegetables from their own production.

- **Orange-fleshed sweet potatoes**

To further promote foods rich in vitamin A in the communities, the project has promoted orange fleshed sweet potato production and consumption. By the end of FY 04, a total of 1,080 households had established orange-fleshed sweet potato gardens. To reinforce Africare's efforts, the Gender Informed Nutrition and Agriculture (GINA) project has budgeted for 40 community-based orange-fleshed sweet potato multiplication centers to be established in the project area. This project aims to improve nutritional outcomes, especially of children below five years of age, by promoting integrated nutrition and agricultural activities that are informed by gender analysis. To provide various products of orange-fleshed sweet potato such as juice, chips, flour and doughnuts, Africare has planned to train communities in small scale/household-based appropriate processing as a way of increasing consumption. This is expected to be a major sustainability strategy for their increased and continuous utilization.

d. Small livestock promotion

Protein-Energy Malnutrition in Uganda is extremely high and this is particularly evident in southwestern Uganda where, as noted above, the level of stunting among under-five children is the highest in the country. In this region, proteins, especially from animal sources, are very limited in the diet. Ownership of cattle serves as a form of capital accumulation owned and controlled mostly by men. Slaughter for home consumption is not a common practice except for feasts.

To address this problem, the project promoted the practice of raising small ruminants, particularly rabbits and pigs, thereby providing protein/energy-rich meat. Small ruminants are traditionally not owned and controlled by men, giving women, the custodians of nutrition, independent control over the animals, which they could then include in the family diets. Rabbits have the advantages of having a high multiplication rate, do not require special feeding and take little space to rear. These attributes make them a cheap source of animal protein for households.

In addition to addressing Protein Energy Malnutrition (PEM), small livestock production will improve households' micronutrient intakes. FAO/ILSI (1997[22]) emphasizes that small animals (rabbits, goats, pigs, poultry and fish) can make key contributions to micronutrient intake, mainly because of the higher absorption of iron and vitamin A from these foods.

Under UFSI-II, 16 community-based rabbit multiplication centers and 16 community-based pig multiplication centers were established. At these centers, nutrition extension staff train participating farmer groups in basic rabbit and pig husbandry. These centers have been very successful. Africare provided parent stock and non-locally available materials and the communities provided the rest. Families are able to easily build the rabbit and pig pens and feeding the animals is also almost costless as they are given backyard garden and field refuses. Women reported enjoying the quality of the breeds Africare introduced which grow faster and bigger than local breeds.

[22] FAO/ILIS, 1997. Preventing micronutrient malnutrition: A guide to food-based approaches, ILIS press, Washington.

Each woman receiving one rabbit from the multiplication center must provide at least one offspring to a new interested "backyard farmer." This farmer-to-farmer multiplication scheme accelerates the multiplier effect and is expected to greatly increase households' consumption of first class/complete proteins. It also generates income for women to use in accessing foodstuffs they may not be able to grow. Since the inception of the project in January 2002 up to December 2005, 1,362 rabbits and 469 piglets have been distributed. It has been further estimated that up to 876 households built their own small livestock units after they had learned from community-based Africare- built ones. This is an impressive performance.

In the Final Evaluation Survey, the index children in Africare households consumed more meat (7.4%) than non-Africare households (3.7%). According to the same survey, the total count of food consumed for the index child in the households was significantly higher for Africare than non- Africare households. These are strong indications that Africare interventions are yielding the expected beneficial results. From the field visits of the evaluation team, it was evident that the people have started eating rabbit meat and appreciate it. Some women reported that they had not yet started consuming because they were still breeding to share with others. It was clear that the popularity of rabbit rearing is increasing; the demand for rabbits has exceeded the supply from the multiplication units. This is clearly an activity that will continue after the project closes.

e. Provision of safe water and sanitation facilities

To address domestic water needs, the project has promoted the harvesting of water from rooftops. In collaboration with Kisoro District water department, a team of 16 masons was trained in ferro-cement tank construction. Together with these masons, Africare constructed 25 communal water tanks/jars, repaired 5 ferro-cement tanks for water harvesting and distributed 400 tippy taps to 'model homes' among beneficiary households. Each tank benefits 12 households on average. Water user contracts between the beneficiary households and the owners of the water catchments were signed; water user committees were established as well as water-user byelaws formulated to govern the use of the communal water sources. Beneficiaries were trained in water tank/jar maintenance.

As a result of this intervention, women can save both time and energy by not having to walk long distances in very hilly terrain to collect water. Women interviewed during the evaluation noted that they used to spend around 3 hours daily fetching water. That time can now be used on other activities, such as preparing meals for children in the home. However, the team observed that clean water is still a challenge especially in Kisoro during the dry season where women have to go to water sources two to three hours away. The demand for water tanks far exceeds the present availability.

Africare developed a checklist for promoting sanitation and hygiene in the home. This checklist, also known as UFSI sanitation index, emphasizes the construction and use of pit latrines, hand washing facilities (tippy taps), drying racks for dishes, drinking boiled water, having a drinking water storage facility, use of compost pits, clearing of stagnant water clearing near homes, personal hygiene and bathing facilities.

6.3 Partnerships

At the entry of Africare's UFSI-I and UFSI-II interventions, key partners were identified for complimentary purposes as well as to form linkages that would strengthen impact on the ground. The degree of formalization with these partners has varied, but the important point is that through such arrangements, the impact of the project on the ground has increased enormously. Table 6.2 below lists the partners as well as a summary of the nature of partnerships with Africare.

Table 6.3 Key UFSI Partnerships in Nutrition Activities Related to Food Security

Partner	Area of partnership
Ministry of Health (MoH)- Kampala	▪ Trains community based resource persons (Volunteer community- based child growth promoters) in growth promotion activities ▪ Exchanges Information Education and communication materials
Mwanamugimu Nutrition Unit (Mulago Hospital)	• Trains staff and volunteer mothers in child rehabilitation and growth revival • Trains staff and volunteer mother is GMP and nutritional counseling
GINA project/Makerere University Kampala	• Trains community-based resource persons in nutrition • Trains certified service providers like NAADS, AAMP in basic nutrition • Promotes nutrient-rich foods like orange - fleshed sweet potatoes and immune-boosting *Aloe vera* • Creates awareness of nutrition issues among local leaders and policy makers to enable the make of nutrition-responsive development plans and policies • Develops IEC materials and community training manuals • Reinforces Africare's nutrition education messages on local FM radio stations (Voice of Kigezi, Radio Kanungu and Radio Rukungiri)
District Directorates of Health Services	• Trains community-based resource persons (growth promoters) in GMP • Organizes bi-annual child days workshops • Jointly supervises and monitors community-based resource persons' activities • Trains district personnel in basic community Nutrition
Kigezi Diocese Water and Sanitation Department	• Provides community-based health care • Trains community-based resource persons in sanitation • Constructs water jars to provide safe water for both consumption and production
District Local governments, village local councils	• Creates an enabling environment for project activity implementation • Supports and enforces nutrition and sanitation by-laws formulated by the communities • Participates in community conflict/dispute resolution sessions
NARO	• Promotes production of nutrient-rich foods like Orange-fleshed sweet potatoes

6.4 Status of Monitoring and Evaluation Indicators

Table 6.4 shows the status of the Monitoring and impact indicators as of September 2005.

Table 6.4 Current Status of the Monitoring and Impact Indicators

Indicator	Baseline Value	Target FY 05	Achieved FY 05	% Achieved FY 5/FY05 Target	Target End-term (DAP)	% Achieved at End-term
Monitoring Indicator						
2.1 Number of children in GMP of UFSI	0	8,640	7,151	83%	8,640	83%
2.2 % of mothers exclusively breastfeeding 6 mos. after birth	40%	80%	47%	59%	80%	59%
2.3 % of households adopting adequate sanitation practices according to the UFSI index	41%	65%	70%	108%	70%	100%
Impact Indicator						
2.1 Reduction in % stunting of children 24-59 months (< -2 Z score ht/age)	36%	N/A	30%	N/A	29%	97**%**
2.2 Reduction in % underweight of children 0-35 months (< - 2Z score wt/age)	28%	21%	22%	86%	19%	86%
2.3 Average Dietary Score* at: HH level Men Women Children > 6 mo	 4.3 3.6 4.2 4.0	 5.5 5.5 5.5 5.5	N/A	N/A	 7% 7% 7% 7%	 N/A N/A N/A N/A

***** Average number of food groups consumed in given period of time.

6.5 Comparison of UFSI-II Achievements in Relation to DAP Targets

Monitoring Indicator 2.1 Number of children registered in GMP program of UFSI: A total of 7,151 children were enrolled as of FY05, comprising 83% of the LOA target. Altogether, 106 UFSI-I and 103 UFSI-II villages were covered. It is expected that more children will be enrolled over the remainder of the project, given that some of the GMP activities are in the early stage. This is especially true of communities enrolled in FY05. It is expected, therefore, that the target will be achieved after the life of the project. The evaluation team noted that the GMP activities also attracted mothers that did not belong to the targeted groups - a positive spill over effect.

Monitoring Indicator 2.2 Percentage of mothers exclusively breastfeeding for 6 months after birth: The FY 05 Results Report noted that 47% of mothers reported breastfeeding exclusively for the first 6 months. This achievement is lower than the LOA target of 80%. Anecdotal evidence from the field visits pointed to a number of cultural reasons for this shortfall. Most of the mothers work in fields that are far away from home and to where it is difficult to carry a child. As a result, they only breast fed until

such a time that the child could be left in the care of younger siblings. Usually, liquid foods were introduced at around 5 months.

Monitoring Indicator 2.3 Percentage of households adopting adequate sanitation practices according to the UFSI index: Toilet coverage improved in the targeted communities. As noted in the FY 05 Results Report, 70% of households had adopted adequate sanitation practices. The Final Survey report noted that the percentage was much lower in non-targeted households (37%). However, some challenges were observed during the field visits. For example, for some groups visited in Ntungamo and Kisoro it was not possible to dig latrines deep enough because of underlying rock; the volcanic rocks make it difficult to construct structures.

Impact Indicator 2.1 Reduction in % stunting of children 24-25 months (<-2Z score ht/age):
Results show that, as of September 2005, the percentage of stunting of children 24-25 months (<-2Z score height for age) was 30%, only slightly higher than the DAP target of 29%. This is an impressive reduction from the baseline stunting percentage of 36% and can be attributed to the project's community participation in the nutrition education activities and also active involvement in identifying potentially-at-risk children. It is expected that the target will be achieved by the end of the project, given that there are some communities where activities only started in FY 05.

Impact Indicator 2.2 Reduction in underweight of children 0-35 months (<-2 Z score):
The percentage of underweight children 0-35 months (-2 Z score) as of September 2005 was 22% against the targeted 19%. This was slightly above the FY05 target of 21%, and well below the baseline figure of 28%. It should be noted that the Final Evaluation Survey found that only 15% of children surveyed to be underweight. Africare's partnership with Ministry of Health, Mwanamugimu Rehabilitation Centre in Mulago, CIP, and DDHS offices in training and backstopping nutrition extension staff to provide community-based solutions has greatly contributed to this improvement. From practical demonstrations, women have been able to try different recipes for meals which they fed to children. Also, the improvement in sanitation and hygiene in the targeted households contributed to the achievement; reduced occurrence of diarrhoeal diseases has enabled children to gain and retain their weight.

Impact Indicator 2.3 Average Dietary Score at the HH; Men; Women; Children > 6mo levels:
The dietary diversity at the household level improved in the targeted households from 4.3 at Baseline to more than 6.0 for all the categories of household members according to the Final Evaluation Report (no such estimates were available in the FY05 Results Report). The evaluation team noted that the project has emphasized women's participation and equipped them with relevant nutrition information, thereby benefiting all household members. The improved utilization of vegetables and fruits is especially noteworthy. It is expected that the LOA target of 7 is achievable given that the FY05 villages are increasingly following better nutrition practices and that the rabbit multiplication will be accelerated as more multiplication sites are established, and also as households will have reared more rabbits over a longer time frame, it can be expected that they would consuming them more frequently.

6.6 Implementation of the Recommendations of the Mid-Term Evaluation (MTE) .

The FE team noted that almost all of the MTE recommendations had been carried out or were presently underway, and would be completed by the time of project closure (Table 6..5). The team especially notesthe strong collaboration developed between Africare health staff and the District Helth workers.

Table 6.5 Implementation of the Recommendations of the Mid-Term Evaluation (MTE).

Recommendations	Action Taken/Remarks
***1**: Develop/adopt and avail IEC materials for nutrition and sanitation education*	Collaboration with CIP enabled the section to obtain materials on the nutritional benefits of orange-fleshed potatoes. Other materials on breastfeeding, vitamin rich foods and antenatal care were obtained from MoH headquarters in Kampala and distributed to GPs. The project plans to aquire additional IEC materials from the MoH
***2:** Procure weighing scales and growth charts for all villages.*	Out of 144 phase II villages, 103 have trained community-based volunteer child growth promoters (CGPs), each with weighing scales and all practicing GMP. Only 41 villages out of the 144 have not yet had their GPs trained in child growth promotion activities. To cover all UFSI-II villages, therefore, an additional 41 weighing scales are needed. Last year (FY05) 23 scales were procured but these have not yet been distributed because the GPs are not yet trained. Training of these 41 GPs, as well as procurement of the remaining 18 scales and their distribution is planned for the second quarter of FY06. In fact, the process has already begun[23].
3: Agree with the District Directorate of Health Services in Kabale to let sub-county staff backstop the GPs in all 106 UFSI-I villages, ensuring that data collected is shared. Identify and document lessons learnt.	It has been a practice of the project to fully involve the district health workers in activities, and this is still on going. Initial discussions on sustainability of all nutrition-initiated activities were held between Africare and the District Directorates of Health Services in all five districts. Through these meetings, the DDHS Offices approved the sharing of weighing scales (Kanungu District) and to have joint training sessions for both the GPs and health workers at the parish level (Health Centers II). An important part of the sustainability strategy is involving the GPs in the MoH quarterly review and planning workshops. This will be handled at the next step of negotiations with the Local Governments. It is important to note that there have not yet been any negotiations for the GPs in UFSI-I communities in Kabale to start planning with the rest of the health workers. **The FE team recommends that this be done before the close of UFSI-II.**
4. Build the capacity of GPs to participate in the quarterly sub-county work plan meetings for health and support the cost of their participation until the DDHS can included it in their next budget.	Activities in which both district health workers and GPs have particularly been involved are Growth Monitoring and Promotion (GMP), practical cooking demonstration and home-to-home sanitation visits. Africare GPs freely share growth-monitoring data with the MoH workers (though this is yet to be formalized), and the Food Security Committees for all community members to know the status of their children as far as weight for age is concerned. Also, Africare, in partnership with Kabale DDHS, conducted a refresher-training workshop in GMP; 48 GPs and 9 health workers at Health Center II (Parish level) were trained on the importance of action planning, GMP, child development and the use of child health cards to monitor growth of under five children. As a result, some GPs have been selected as MoH drug

[23] The reason the project is procuring 41 and not 45 scales as recommended in the MTE is that 4 villages have already received scales from the Nutrition and Early Childhood Development Project (in Kanungu).

	distributors. The DDHS have also expressed interest in taking over some Africare nutrition education centers as part of the MoH outreach program for health-related activities. Further involvement of MoH workers in Africare activities is planned for FY 06 so that the DDHS can fully 'buy in' to the project activities and sustain them once the project closes.
5. Train GPs in the interpretation of village results and build their capacity to share these results with the FSC and at sub-county level.	Majority of GPs were trained to summarize and share growth-monitoring information in the monthly village meetings. Summaries included number of children who gained/lost/maintained weight in a given period, number of sick children as well as referrals made to nearest health facility. Follow-up is made on the households with growth faltering children and nutritional counseling is done to ensure that recommended care and feeding practices are adopted.
6. Determine the extent and effects of non-participation on nutritional status	The end-term survey was conducted in which beneficiary and non-beneficiary households were targeted. Case studies to compliment the findings are planned for in FY 06 to address this issue and enhance the sustainability strategy
7. Promote planting of drought resistant vegetable varieties where there is limited access to water:	All targeted communities have been trained to establish BYGs of indigenous vegetable varieties* Most indigenous vegetables species are not only drought resistant but are pest and disease resistant, early maturing, easily accessible, locally available, multi-seeded, culturally appropriate, nutritious and have longer harvesting periods. For these reasons, project staff found their promotion appropriate and sustainable and recommended them for even those areas that are not water-stressed.
8. Improve access to potable water	The project established 20 water tanks of 10,000-liter capacity and 5 of 6,000-liter capacity each targeting 12 households in Kisoro district. A total of 30 water jars of 400 liters, a gravitated water scheme, 1 communal water tank in Ntungamo and two in Kabale each of 10,000 liters.

* Such as *Amaranthus cruentus*, *Amaranthus hybridus, Amaranthus dubius, Solanum nigrum, Solanum ang*[24]*uiivi, Solanum aethiopicum* and C*leome gynandra)*.

6.7 Lessons learnt

1. The nutrition interventions of the project were highly appropriate for the needs of the communities. The project helped create awareness of existing malnutrition and empowered communities to identify causes of malnutrition. It also introduced households to better ways of using locally available food items. For example, before the project, children were fed '*enkumba*' (ungerminated sorghum porridge) and not germinated sorghum porridge '*obushera*' in the belief that germinated cereals were not good. Now, they prepare *obushera* in a hygienic way and restrict its fermentation so that the complex sugars in the cereal are broken down for easier digestion.
2. Community participation and commitment played a crucial role in adopting the nutrition interventions and in fostering ownership of the program.
3. Utilizing readily available products both in nutrition and sanitation interventions meant that households readily adopted better feeding practices, especially for the children.

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4. In all the communities visited by the evaluation team, records showed that all the children in the community GMP program regularly attended the sessions. This impressive performance was attributed to the follow-up done by the GPs as well as the responsiveness of the mothers. The use of GPs from within the targeted communities motivated the mothers to bring their children for GMP activities.
5. Field visits noted that the use of the improved cook stoves had changed the way meals were prepared and saved preparation time. Also, the food is said to better retain its flavor. Besides saving on the firewood, used, the improved stoves improved the quality of life for the women since they could cook more efficiently and also there was much less smoke.
6. Targeted groups were encouraged to draw up bylaws to enforce the implementation of village action plans. For example, all households are required to have a latrine or risk paying heavy fines or imprisonment. Involving the local leadership consolidated the operation of the laws initiated in the groups.
7. The phasing of the nutrition components in UFSI-II was crucial in the adoption of appropriate practices. The introduction of rabbits was intentionally timed after communities were empowered to use locally available materials to balance their diet. Since available food items were mainly plant based, it was also easier to adopt the uncommon practice of rabbit keeping after appreciating the need and importance of animal protein in the diet.
8. The linkages between UFSI's sections were advantageous in enhancing the efforts to improve food utilization at the household level. The multi-sectoral approach of increasing agricultural productivity, energy conservation, provision of safe water, improving sanitation and demonstrations of appropriate feeding maximized the impact of the interventions dealing with the underlying problem of food, health and the related causes of malnutrition. Farmers were able to observe immediate benefits in the health and nutrition of children.
9. Partners such as the Ministry of Health complemented project interventions by providing services not provided by the project. For example, in some communities visited, women and children were able to access immunization, de-worming services, and vitamin A supplementation after being linked by UFSI-II nutrition extension agents and the child growth promoters.
10. Partnership with Makerere Univerisity and others enhanced UFSI-II efforts. The GINA project reinforces the UFSI-II activities by sponsoring weekly radio messages. Farmers reported never missing any of the informative radio programs. AFRICARE nutrition staff are involved in the program production and presentation on radio. This is a window of opportunity that is often used to emphasize the messages delivered by field staff. Below is a brief extract from a typical radio show presented by staff from the nutrition section on Voice of Kigezi radio (Box 6.2)
11. The nutrition section administration, like other project sections, has extension staff residing in the targeted districts and a section head that oversees them. This has worked well to enhance the interactions of the field staff with the communities, helping them identify problems and find workable solutions with UFSI's help.

6.8 Appropriateness of Monitoring and Impact Indicators

Monitoring Indicator 2.1 Number of children registered in GMP program of UFSI: This is an appropriate in assessing progress of attendance at GMP activities and tracks GMP.
Monitoring Indicator 2.2 Percentage of mothers exclusively breastfeeding for 6 months after birth: This is a useful indicator to monitor the progress of adoption of child health promoting practices and to assess impact at end of project. In setting this indicator, it is important to take account of the context. The UFSI-II DAP target was set at 80% while the actual value according to the end term survey was 51%. Women are still limited in their desire to exclusively breastfeed due to their workload, distance to fields over the hilly terrain in this part of the country. Hence a relatively lower LOA target should have been set.

Monitoring Indicator 2.3 Percentage of households adopting adequate sanitation practices according to the UFSI index: The UFSI index on sanitation is relevant for monitoring purposes. In this index, scores of up to 29 points are assigned to the 7 components of hygiene and nutrition in a household; pit latrine, compost pit, hand washing facility, drinking water storage facility, utensil drying rack, bathing facility, boiled water. A household is considered to have adequate sanitation if it scores 50% or more. However, to have a sense of priority among these practices, it is important to also measure the prevalence key sanitation practices such as % of households with toilet facilities, boiled drinking water and plate drying rack.

Box 6. 2 GINA/AFRICARE Nutrition Broadcast
Show No. 8: Nutrient Needs During Pregnancy and Lactation

"Last week we were talking about how we can have a balanced diet for our family. We are now continuing this program and are going into the needs of those groups most vulnerable to malnutrition, i.e. pregnant women/child bearing women, lactating, infants and children of the sick and elderly.

Today we are specifically concerned with pregnant and lactating women. If you remember we pointed out that proper feeding implies maintenance of a balanced diet throughout the life of the individual, which, in effect, starts at conception. Since in this case the food must come from the mother's body therefore if we are interested in the nutritional/health status of the child then we automatically have to get interested in the mother and the woman in general. I again emphasize to people out there if you are interested in healthy well fed children then you must be interested in healthy well fed women.i.e. feed the woman and feed the nation. Because you can have a woman who may be already malnourished in infancy then it upon the family/man to feed and have good care of the mother who is basically the human factory. The woman must also take upon herself to feed herself if she needs a healthy and well-fed child. It is not about waiting for the man/daddy. Why really? It is you women who produce the food for the whole family. Many times in our awareness training courses we have mostly concentrated on teaching women to feed and care for children and left women out. Now we are saying that is quite wrong. Researchers have found out that poor nutritional status of the mother will affect the newborn. Even in later years (middle and old age) a malnourished baby at birth will be affected so much. This person will be more susceptible to diseases of affluence such as high blood pressure, & diabetes. Also poorly fed mother in her younger days (stunted) will have poor bone formation that can lead to difficulty during birth and even failure to deliver a baby. Thus the importance of today's course".

Impact Indicator 2.1 Reduction in % stunting of children 24-25 months (<-2Z score ht/age): The indicator should be stated in actual percentage and not reduction in percentage, which is the objective of the intervention. It should be modified to read ' % stunted children 24 –25 months (<-2Z score ht/age)'.

Impact indicator 2.2 Reduction in underweight of children 0-35 months (<-2 Z score): As suggested for impact indicator 2.1 this should be '% underweight children 0-35 months (<-2 Z score).

Impact Indicator 2.3 Average Dietary Score at the HH; Men; Women; Children > 6mo levels: The desegregation of this indicator by men, women and children is appropriate given that intra-household food distribution can influence nutrition outcomes.

6.9 Opportunities for Sustainability

1. The existing district health structures at the village level can be involved more in nutrition intervention activities. Information collected by the GPs can be fed into the district health information system. To the extent feasible, GPs should be absorbed into the District Health

Teams and be trained to not only follow-up on growth promotion among children but also to be useful health agents.

2. The GPs have been useful in follow-up as well as providing nutrition counseling to women both in their groups and in the villages in general. This has not only created awareness about their services but also impressed villagers who now have a source of useful information in their locality. The project can equip these GPs with nutrition, health and sanitation materials such as manuals, counseling cards, booklets and brochures that they can retain once the project closes.
3. Pilot the GMP to take on the Community-based Therapeutic Care (CTC)/Hearth model. Since GPs are from within the targeted communities, the nutrition extension staff can work with them to mobilize women in participation and eventually, ownership of the GMP activities within the villages after the project ends.
4. The awareness created of the benefits of vegetable growing can be translated into income generation for the households. With the opening up of opportunities as a result of improved infrastructure and given the availability of land, farmers can be encouraged to expand their backyard gardens to commercially viable levels.
5. CIP has developed simple technologies to increase the utilization of orange-fleshed sweet potatoes. The project should take advantage of this and train beneficiaries in collaboration with CIP. Also additional multiplication sites for planting material for orange-fleshed potatoes can be set up and handed over to the communities to manage.

6.10 Recommendations

6.10.1 Recommendations for the remaining UFSI-II period

1. Utilize available nutrition information and education materials from Ministry of Health and other agencies both in English and the local language as soon as possible. The project should contact the Ministry of Health and other agencies for possible reproduction of available materials. The key messages needed include breastfeeding, complementary feeding, causes, signs and symptoms of malnutrition, meal planning, nutrients and their food sources and uses in the body, family planning, hygiene and sanitation.
2. Farmers need to be encouraged to keep growing the indigenous vegetables including *Amaranthus cruentus*, *Amaranthus hybridus, Amaranthus dubius, Solanum nigrum, Solanum anguiivi, Solanum aethiopicum* and C*leome gynandra.*
3. The field visits indicated that the demand for improved rabbits is high. It is recommended that, before the project closes, the number of multiplication sites be doubled from the present 16. This should be accompanied by intensified nutrition education activities to promote the benefits of rabbit consumption in the communities. The extension services should be conducted in collaboration with the sub-county veterinary department.
4. More men and women should be involved in the GMP activities and encouraged to offer support to the identified GPs in the community. The project's nutrition extension workers could then identify those suitable for training before the end of the project.

6.10.2 Recommendations for the MYAP

1. Although a mid-term survey was not planned for in the project DAP, it is necessary to have it in the DAP for the MYAP especially for tracking indicators such as the UFSI sanitation index, underweight and dietary diversity.
2. Nutrition information and education materials should be developed and disseminated alongside the GMP activities. Both should start early in the project life since social cultural changes take time to effect.
3. More than two volunteer GPs per community should be involved in the GMP; increased community involvement will enable the communities sustain the activities at the end of the interventions.

4. The CIP partnership in the promotion of value addition of orange-fleshed potatoes should be continued. Where possible, these value addition activities should be built into the nutrition education demonstrations.
5. More partnerships in nutrition interventions should be sought and built at both national and local government levels, especially at planning and implementation.
6. Improved cook stoves should be promoted as an integral part of the nutrition education activities, in view of its advantages of conserving energy as well as enhancing the quality of life of both women and children.

Chapter 7 EXIT STRATEGY AND PROJECT SUSTAINABILITY

7.1 Exit Strategy and Sustainability of Project Activities

7.1.2 Exit Strategy and Sustainability for the Project as a Whole

The UFSI Phase II project is scheduled to end on September 30th, 2006. As noted both in the Mid-term Evaluation Report and in this Final Evaluation Report, the project has recorded some remarkable successes. In a region where extreme poverty and environmental deterioration were endemic, where remote villages had few, if any, roads, where children had very high rates of preventable diseases and suffered from severe malnutrition, and where food shortages plagued the population, the impact of this project has been remarkable. This is evident not only from the indicators, but from the palpable enthusiasm of the project beneficiaries, and the obvious positive impact on their well-being. Yes, there have been setbacks – some administrative difficulties, funding uncertainties, and unexpected weather extremes, but the considerable improvement in the quality of life of the beneficiaries cannot be disputed.

The challenge now, before the project closes and within the available resources, is to ensure that systems and linkages are in place to promote the sustainability of project-initiated activities. In many ways, Africare is in a strong position to promote the sustainability of the project's activities. Developing and fostering cohesive and dynamic farmer groups and working in close partnership with many organizations will both contribute in a critical way to the sustainability of the project activities. Over the remaining project period, however, there are several key issues to be addressed both at the overall level of the project, and at the component level. These are:

- **The Farmer Communities**. Issue: Do the supported communities have sufficient motivation and capacity to continue on their own should no other partner or agency come to their aid? If not, what can the project do to strengthen this motivation and capacity over the remainder of the project? Cohesiveness of the community groups is key to sustaining each of the project's components and the project has empowered communities in leadership and group dynamic skills to achieve this cohesiveness.

  It is recommended that groups be identified that could benefit from additional training in group capacity building and the project make a special effort to provide such training on a selective basis over the remainder of the project. Where relevant, leaders from these groups should be given additional training in group dynamics, in how to approach potential partners/agencies, and in what to request from local government officials.
  It is also recommended that selected communities be trained in writing simple proposals that can be presented to development partners for funding.

- **NGOs and other Agencies.** Are there competent and relevant agencies or partners that will continue in the villages when UFSI-II closes? What can feasibly be done to develop linkages with appropriate NGOs and other agencies before the project closes?

  It is recommended that, over the remainder of the project, staff identify such agencies or partners and identify a strategy for linking them with appropriate farmer groups. *It is recommended* that Project management consider holding a workshop (or workshops) where leaders of selected farmers' groups could meet with NGOs and other relevant agencies to discuss common interests and plan joint activities. It would be important to invite local government officials to keep them informed of progress and needs. Special attention to the NAADS program *is recommended*, and farmers should be encouraged to register as a group at the sub-county level and request services

from NAADS. Many are already doing this, as noted in Chapter 4, but it is important that all possible groups make the link with NAADS.

- **Local Government.** What should be the role of the local government in this process, and what can realistically be expected of them?

  It is recommended that section heads in collaboration with field staff identify interested and motivated local government officials who would give support to farmers in conjunction with NGOs and other agencies once the project closes. Once such officials are identified, it is recommended that the PM (and if possible, the CR) together with the section heads visit with them and formally request their continued support in specific activities. Where appropriate, a support strategy should be worked out jointly with the officials and appropriate communities.

- **Private Sector**. How can the private sector play a role in supporting the communities, and what is needed to facilitate this before the project closes? Linkages with certain private sector partners have already been made (such as the fast-food restaurant Nandos in Kampala for potatoes, and the connection between the Apiary Farmers Groups and the Agriculture Development and Integrated Organic Farming (ADIOF) which exports honey to the EU), but more should be done.

  It is recommended that a concerted effort be made to promote linkages between private sector partners (e.g. traders, entrepreneurs, retailers and wholesalers), and farmers. There is already considerable informal trading in the area but, as the farmers' capacity to produce a surplus for sale increases, further linkages will be needed. Private sector partners should be invited to the workshop(s) proposed above.

  It is also recommended that linkages be made with any market information services active in the area, and that the possibility be looked into of using the local radio to broadcast the market prices of agricultural products (e.g. Irish potatoes, beans, mangoes, apples, etc) and agricultural inputs (chemical fertilizer, pesticides, etc.). The broadcast could also give information about transport availability for produce (e.g. the timing of trucks passing through certain localities, etc). The nutrition section head of the project is already broadcasting weekly on nutrition information (see Box 6.2), funded by the GINA project. Since the majority of the farmer beneficiaries are women, the possibility of the GINA project also supporting such a market information service should be explored.

- **Extension of the Project Using Non-Title II Funds.** There is clear evidence that the longer the project has a presence in communities, the stronger the cohesion of beneficiary groups and the more likely the adoption of promoted interventions. The field visits of the final evaluation team as well as the end-term survey findings clearly show that households that have spent longer with the project are benefiting much more from Africare's interventions than those taken up much later. This is because, while the groups formed first were found to have adopted the new practices with commendable success, those formed towards end of the project (especially FY05 groups) lacked in-depth understanding of issues and the adoption of practices was relatively low, thus requiring additional support.

  The Final Evaluation team strongly recommends an extension for the project after September 30, 2006. **It is clear that funding would have to come from non-Title II resources**, and it is recommended that USAID together with Africare seek possible funding sources to support the following activities:

  1. A skeleton staff in the Kabale office to supervise remaining Africare activities and facilitate the transition to complete phasing out for a twelve-month period.

2. Continuation of the NRM activities for a period of at least six-months. As discussed in Chapter 4, NRM interventions take time to become absorbed and fully understood by communities, and to be carried out and maintained. Yet these interventions are crucial to the economic well-being of the beneficiaries, as well as to the environment of the region. The newer groups in the project need continued support to encourage them to adopt such practices, and sustain them. Also, as discussed in Chapter 4, the implementation of the NRM interventions has been delayed due to funding problems.

To ensure the sustainability on the NRM interventions, and the commitment of groups, especially those formed in FY04 andFY05, to adopting the activities promoted by these interventions, an extension of at least an additional six-month is strongly recommended. Since the number of villages to be covered would be limited, the extension would be at a reduced level of operation than the present level, but it is the view of this evaluation team that such an extension would be invaluable.

- **Preparation of a Documentary Video.** There is much to learn from the success of the UFSI project. As noted in the MTE: "Conceptually, the project is brilliant. Food security, being a multi-sectoral concept, requires a multi-sectoral approach, which is exactly the design of UFSI." (Executive Summary, pg.i). The project was nominated for the 2004 Equator Prize, and has been written about is glowing terms by an independent evaluator, Stephen Smith, in his book "Ending Global Poverty.[25]" Lessons learnt from the concept and practical implementation of the project would be extremely useful not only for Africare staff, but as a tool for other development practitioners.

  It is recommended that a video be prepared to document the evolution of the UFSI project, to examine the synergies of such a multi-sectoral approach, to present the challenges of the funding process, and to demonstrate the positive impact that the project has had on the lives of beneficiaries. Such a video would need to be prepared before the end of the project.

7.1.2 Exit and Sustainability Strategies by Component

The following are the proposed activities and steps to be taken by each component over the remainder of the project to promote the sustainability of the project's activities.

Agriculture

1. Scale down the supply of demonstration materials and community trainings for FY02, FY03 groups and intensify activities in those groups formed in FY04 and FY05 (note: the exception would be groups which had no or little harvest due to the recent drought, e.g. the group in Buhumuriro village in Rukungiri District).
2. On a selective basis, and if funds are available, information brochures should be prepared and distributed to farmers on key agronomic practices, on IPM and on disease management. The section head would do this, with support from other staff.
3. Strengthen current partnerships (NARO, CIAT, UNSPPA, NAADS, local government) and initiate new ones (AAMP, KADFA). This could be done at the workshops proposed above, under the leadership of the section head, as well as in the daily activities of staff..
4. Establish parish-level and village-level task forces to control the banana bacterial wilt disease in collaboration with the local government. This should be discussed at the meetings proposed above between project management and staff and the local government officials.
5. The UFSI intervention model is based on the concept of reinforcing the technical and administrative capacity of the **Food Security Committees** (FSC) in villages where Africare intervenes. Women are especially involved in the training; estimates by the project staff place

[25] Smith, Stephen C., *Ending Global Poverty: a Guide to What Works*, Macmillan, 2002

women's participation in the training programs at approximately 80%. Africare's strong focus on institutional capacity building should later translate into autonomous activity implementation by farmers, thereby promoting sustainability. During the remaining project period, project staff should intensify the training of the FSCs at the village level (FSCCI), and review village action plans using the "A3[26]" approach. Other stakeholders should also be involved in the process.

Marketing

1. Foster market linkages through discussions with various stakeholders (AAMP, CIAT, NAADS, CARE, KADFA, UNSPPA, local government). This could be done at the workshop(s) proposed above, as well as in the daily activities of staff.
2. Facilitate beneficiary groups in developing business plans to help them be more aware of simple business practices. This could be done in the training and review of the VAPs proposed in the agriculture section.
3. Facilitate groups in gaining legal business status through formal registrations. The registration at the sub-country level is important since this enables groups to access NAADS services.
4. Encourage the formation of Saving, Credit and Cooperative Societies (SACCOS) to target government rural micro-finance schemes; conduct exposure visits to successful SACCOS.
5. Link agro-processing groups to markets (such as the Apiculture Development and Integrated Organic Farming-ADIOF, schools, hotels, and retail food stores). This should be done in the daily staff activities over the remainder of the project, and also through the proposed workshop(s).

Natural Resource Management

1. Strengthen tree-seed production and distribution systems. **This needs to be done on an urgent basis.**
    a. Increase the number of tree-seed banks.
    b. Accelerate the training of farmers in tree-seed harvesting.
    c. Link farmers groups /NRM committees to prospective seed suppliers and the immediate and external buyers of the tree seedlings.
2. Strengthen the community maintenance system for the Nyakishenyi gravity-flow water scheme.
    a. Design and sign a maintenance contract with the local authorities. Africare staff should facilitate this (this could be one of the topics to be discussed at the project management meetings with district officials proposed above). There is, however, the issue of whether it will be honored and binding to the local authorities, given their severe shortage of funds.
    b. Hand over the GFS to the community/local government. (Note: this may need a MoU and/or guidelines)
3. Review the VAPs and community work plans through meetings with stakeholders at the community level. Strengthen the partnership with the local government environmental offices to ensure enforcement of the environmental byelaws. Conduct advocacy campaigns for enforcing the water-user byelaws.

Community Nutrition

1. Intensify the number of visits to communities to explain long-term benefits of nutrition activities, in partnership with local authorities and other stakeholders implementing health interventions.
2. Modify the Growth Monitoring and Promotion program based on the Community-based Therapeutic Care (CTC)/Hearth model (as described in Chapter 6).

[26] Assess, Analyze, and take Action

3. Conduct education training sessions in nutrition and sanitation in partnership with health workers at both sub-county and parish level; nutrition staff to participate in the Ministry of Health outreach activities at parish level.
4. Assist in establishing Saving, Credit and Cooperative Societies (SACCOS) to target government rural micro-finance schemes (as recommended in the Marketing section above) to finance construction/purchase of a greater number of water jars for household use.
5. Establish more small livestock multiplication units; involve district veterinary officers in the management of these units.
6. Continue to promote production and consumption of indigenous vegetable varieties that are easily accessible, more resistant to pests and diseases, and nutritionally sound.
7. Establish additional multiplication centers for orange-fleshed sweet potato varieties in partnership with the CIP, NARO and GINA project, and train farmers in value-added processing of orange-fleshed sweet potatoes, such as production of juice, chapattis, bajiya, and crisps.

Community Roads

1. Facilitate establishment of road maintenance committees at the parish level in line with government's recommendations.
2. Review MOUs with the local governments to advise them on roads maintenance after the handover and to the extent possible get a formal commitment. This should be done at the meetings recommended above between project management and district officials.
3. Advise communities along the road of the benefits to them of environmental mitigation measures, and train them in how to undertake these measures. Decide on what facilitation/incentives are needed to ensure such measures are undertaken after UFSI-II. What would be the role of the road maintenance committees? Should byelaws be established to support these measures? And what would be the role of the local government officials?
4. Train communities along the road in road maintenance and bidding for road works. Identify competent groups that can undertake these bids, and support them with relevant training until project closes.
5. Provide training certificates to workers who have received on-job training in road maintenance and environmental mitigation measures.

Monitoring and Evaluation

1. Given funding availability, translate the FSCCI and the Food Security Calendar tool, training manuals, and information brochures into local languages and facilitate the communities in using them autonomously.
2. At the workshop(s) recommended above, introduce and discuss the sustainability strategy and review all MoUs with the partner district LGs.
3. Conduct field visits to the project sites with present and potential partners to enable the to experience first-have the project activities and benefits. It is recommended that this be done after the workshops.
4. Hold exit Participatory Rural Appraisals (PRAs) in communities. Work-plans and budgets need to be prepared for all these proposed activities

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Annexes

Africare/Uganda
Uganda Food Security Initiative – Phase II
Scope of Work: Final Evaluation
Date: January 2006

1 Introduction

The focus of this final evaluation is on the second phase of the Uganda Food Security Initiative, a program funded under the USAID P.L. 480 and USAID/Uganda, and implemented by Africare Uganda. All activities under this program will be evaluated on their individual merits as well as on their impact as complementary interventions launched in pursuit of the overall goal – enhancing food security in southwestern Uganda.

1.1 Project description

The second phase of the Uganda Food Security Initiative (UFSI-2) ends in September 2006. This activity builds on the successes of the activities implemented in Kabale, UFSI-I (FY 97 – FY 01), and continues to implement steps towards enhanced food security in the region through interventions in five major areas: agricultural production and post-harvest handling, natural resource management, community nutrition and sanitation, marketing, and farm-to-market road access.

Africare expanded its intervention into five districts in Southwestern Uganda (Kabale, Kanungu, Kisoro, Rukungiri and Ntungamo) in response to the high level of food insecurity in the region as indicated in the baseline survey 2002. As defined by USAID, food security is "when all people at all times have both physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life". Under UFSI II, Africare has been working to achieve this goal by addressing the three main aspects of food security – availability, access, and utilization. For example, in order to increase food availability, UFSI-2 staff provides training households and communities in soil and water conservation methods that lead to an increase of annual crop yields. To improve food access, UFSI-2 encourages production of cash crops, which provide farmers with additional sources of income. In addition, roads are built to facilitate commercial activity related to agricultural production. The income generated can, in turn, be utilized to buy food, especially in times of shortage. Interventions in community nutrition and sanitation target women and children under five and serve primarily to improve food utilization through consumption of a variety of nutritious foods, vegetable backyard gardening, nutrition, and sanitation education sessions, growth monitoring, and promotion and promotion of small animal husbandry.

Under UFSI-2, Africare assists in the region through the following interventions:

Natural Resource Management – Africare supports ongoing activities and initiates new ones to address soil erosion, fertility decline, and dry spells, which were identified by the farmers as the major contributors to high food insecurity in the baseline survey. Such activities usually include construction of trenches, terraces, and trash lines, planting of hedgerows and new tree varieties to prevent soil erosion, composting to improve soil fertility, and building fuel-efficient cooking stoves to preserve firewood. NRM interventions are typically conducted through village-based action plans and community resource maps, based on which the community identifies the problems and prioritizes activities in a participatory way. By this community-centered approach, UFSI-2 attempts to address the problem indicated in the baseline survey, namely that there was very little or no collective community effort to prevent soil erosion and conserve natural resources.

Agricultural Production/Post Harvest Handling and marketing – This intervention assists farmers in overcoming various constraints on agricultural production and to prevent food shortages in individual households resulting from low yields and high post-harvest losses. UFSI-2 addresses the major production constraints on production as indicated by farmers in the baseline survey – crop diseases and pests, poor seeds, and infertile soils by promoting improved agronomic practices such as line-planting, fallowing, crop rotation, mulching, organic manure use, and supplying improved seed varieties for further multiplication and dissemination among farmers. The baseline survey also identified inadequate storage and fast spoilage as a major source of food insecurity, which UFSI-2 addresses by promoting the construction of light-diffuse community stores and other storage facilities.

Community Roads – Similar to the first phase, UFSI-2 constructs community road segments to connect commercial farmers with potential markets for their produce. This intervention is especially important in the communities in where the lack of road access hinders farm-to-market movement agro-business and access to social services (such as schools, hospitals, and maternity centers). The baseline survey findings indicated that though most communities depended on the local government for construction and maintenance of roads, the technical capacity and funds for such services were limited at the sub-county level.

Community Nutrition – UFSI-2 disseminates valuable information on diet, nutrition, and sanitation especially to women with children less than five years of age, who most often suffer from inadequate diet and, consequently, malnutrition. The baseline survey indicated that 71% of all children interviewed, ate only 1-2 times a day and their diet was severely lacking especially in the protein-rich and vitamin-rich food groups. UFSI-2 therefore promoted activities to improve food availability and variety in households through establishment of backyard gardens and introduction of small livestock farming, for example. Other related activities focus on household sanitation practices, breast-feeding habits, and growth monitoring, because of the frequent illnesses and stunting among children under-five years of age.

All UFSI-2 activities aim to render the improvements in food security durable and sustainable in the long run. Therefore, UFSI-2 activities are applied through community-based groups and Food Security Committees in cooperation with the local government. This community initiative approach is crucial to realize an important objective of UFSI-2 – to strengthen the capacity of farmer groups and partner sub-county governments to prioritize, plan, budget, implement, and evaluate food security activities to meet their own needs.

Project scope

While the previous phase of UFSI focused only on Kabale district, UFSI-2 scaled out to four adjacent districts – Kisoro, Ntungamo, Rukungiri, and Kanungu. The project targets an estimated population of 148,700 beneficiaries in 144 villages. Interventions in community nutrition and sanitation were continued in selected UFSI-1 communities in Kabale district.

1.3 Main project partners

The main project partners are the target communities. Other partners per intervention included:
Community Roads - National Environmental Management Agency, United States Agency for International Development (USAID) Mission to Uganda and District local government works departments.
Agricultural Production/Post Harvest Handling and marketing – International Potato Center (CIP), Center for International Tropical Agriculture (CIAT), National Agricultural Research Organization (NARO), International Food Policy Research Institute (IFPRI) and National Agricultural Advisory Services (NAADS).
Community Nutrition and Sanitation – Ministry of Health, Makerere University Kampala, Mwana-mugimu Nutrition Unit, Child Development Center, Mulago Hospital and the District Directorates of Health Services.
Natural Resources Management – International Center for Research in Agro-forestry (ICRAF), Uganda National Agro-forestry Development Network (UGADEN), African Highlands Initiative (AHI), NAADS, CIAT, Diocese of Kigezi, water and sanitation program, Makerere University, Faculty of forestry and nature conservation, IFPRI, Mgahinga – Bwindi Impenetrable forests Conservation Trust (MBFICT), Kigezi Private Sector Promotion Center Limited (KPSPCL) and Africa 2000 Network.

2 Task description

2.1 Purpose of evaluation

The primary purpose of this final evaluation is to provide an independent and comprehensive review and analysis of the results and achievements of the UFSI-2 with respect to the original goals, objectives, and targets identified in the approved technical proposal. The evaluation should clearly present the successes, problems, and constraints encountered during the execution of project activities, and make recommendations for improvement in future activities, and consolidation of realized results. The final evaluation should substantially refer to the data collected during the end-term household survey

(conducted August/September 2005) and provide a temporal analysis of the achievement levels for key indicators as reported in the baseline survey in 2002 and the end line survey in 2005. More generally, the final evaluation should review the level of achievements for all indicators as reported in the USFI-2 Indicator Performance Tracking Table (IPTT 2005). This exercise should also determine the extent to which the principle findings and recommendations from the USFI-2 Mid-Term Evaluation (conducted July 2004) were implemented. This report should make specific recommendations for the design of future food security activities that Africare will implement in Uganda.

2.3.1 2.1.1. Evaluation report customers

UFSI-2 implementation team, Africare/Uganda Country Representative and Administration Officer, and Africare/Washington are the primary customers of the evaluation report. Other customers are USAID, Government of Uganda, local government authorities, and other UFSI II stakeholders.

2.2 Objectives of final evaluation

1. Assess the effectiveness of program design/management and implementation of the activities in achieving intermediate results and impact with respect to the project's three strategic objectives.
2. Evaluate the usefulness of the key indicators in assessing the long-term impact of program activities and in providing needed monitoring information to improve program management throughout the LOA.
3. Assess the relevance and quality of the baseline and end-term survey data; make recommendations as to what additional data should be included in the future baseline studies and M&E systems for similar projects.
4. Determine the extent, to which the project has achieved its targets, as outlined in the DAP and updated throughout the project, based on the following:
    a) analysis of the data presented in the UFSI-2 end-term survey IPTT;
    b) assess administration and management of resources and their efficient delivery to achieve the intended results
5. Review the impact on the efficiency and efficacy of the project of the following:
    a) Africare's methodology of intervention;
    b) staff capacity and capacity-building efforts;
    c) administrative framework including financial management systems;
    d) technical and administrative backstopping by Africare/Washington and the USAID Mission to Uganda;
    e) current deployment of staff for each of the sections.
6. Assess the usefulness of the project's partnership structures and the how these have supported the sustainability of the project's results/activities in each intervention area.
7. Examine the sustainability of the direct and indirect results attained in each of the intervention areas, and make recommendations as to what additional measures may be needed to increase the sustainability of the project impact.
8. Distill the "lessons learned" from this particular project for future food security projects.

2.3 Documents to be Reviewed

Evaluators should review the following documents:

- UFSI-2 Development Activity Proposal (DAP)
- Detailed Implementation, Monitoring, and Evaluation Plan
- Food Security Field Manual
- Baseline survey report (2002)
- Mid-term evaluation report (2004)

- End-term survey report (2005)
- Annual results reports (FY's 02, 03, 04, 05)
- Quarterly progress reports

3 Evaluation process

Prior to the fieldwork phase of the evaluation, the consultants will review all documents listed above. The team will have the opportunity to conduct an initial briefing and orientation with the AFR/Uganda Country Representative, USAID/Uganda mission staff, and key technical service partners in the GOU.

Much of the final evaluation fieldwork shall be guided by the findings in the end-term survey, which is a principle instrument to validate the impact on the ground.

The following activities will take place after the team has arrived in the program area:

1) UFSI II technical team (the UFSI-2 program manager and each UFSI-2 section head) will present the project's achievements, constraints and the lessons learned to the evaluators.
2) The evaluation team will interview members of the community Food Security Committees, members of farmer groups assisted by the project, village leaders in the communities which directly or indirectly benefited from UFSI-2 interventions, governmental and NGO partners in the region, the UFSI-2 technical and administrative staff, and appropriate USAID officials (FFP). The structure and format of these interviews will be determined by the Team Leader.
3) The evaluation team will visit at least one village per district in each year of uptake. The villages should be selected randomly from the list of targeted villages. The final decision about which villages to be visited will be made by the Team Leader.
4) The extension staff (not the section heads) should arrange for the interviews, with independent translators provided where necessary.

The team leader should plan and carry out the evaluation in a participatory fashion, amongst all the stakeholders. The study should note the opinions of the members of target communities with regard to the relevance of the program in addressing their needs, paying particular attention to significant gender-based differences.

4 Deliverables

1. The consultants will produce a final evaluation report containing the following elements:

Title Page, Date
List of Acronyms
Table of Contents
Lists of Tables, Figures, etc.
Executive Summary

1) Purpose of the final evaluation
2) Background information of the project
3) Achievement of results against the program set targets with reference to:
   - 3.1 Project institutional structure
   - 3.2 Crosscutting themes in project design and implementation
   - 3.3 Project intervention (Agricultural Production, post-harvest handling and marketing, Natural Resource Management, Community Nutrition and sanitation and Community Roads construction/rehabilitation,)
   - 3.4 Institutional Capacity-Building (for both staff and target communities)
4) Lessons learnt
5) Conclusion
6) Recommendations
7) Annexes

7.1 Evaluation SOW
7.2 Composition of the evaluation team
7.3 Methodology

2. A presentation of draft findings and recommendations will be made by the consultants to AFR/Uganda, USAID/Uganda and other partner agencies. Specific comments from this presentation will be incorporated into the final report.

5 5 Team Composition and Qualifications

1) External staff:

- Expatriate Team Leader
- National Nutritionist
- National NRM Specialist
- National Roads Specialist
- National Agricultural Specialist
- Technical Reviewer (USAID Uganda Mission Representative)

2) Africare staff:

- UFSI II Program Manager
- All program technical staff
- District LG extension staff and the target area health workers

6 6 Schedule, Logistics and Level of Effort

The UFSI II program final evaluation fieldwork will be conducted during a two-week period to start o/a 01/09/06. This period coincides with the expatriate Team Leader's travel to Uganda. Four national consultants will be contracted to work with the Team Leader during this period. The entire team will be provided with relevant project documents for review prior to the fieldwork phase of the evaluation.

The consulting team shall be availed office space at Africare Kabale office, for the duration of the period of this evaluation. Africare will facilitate a one-day, on site (Kabale) Team Planning Meeting (TPM) for this evaluation with all the evaluation team members. The consulting team will work in close collaboration with Africare staff to continuously review existing literature during the evaluation period.

After presentation of the draft findings and recommendations at the end of the fieldwork phase, the Team Leader will have the responsibility to complete the final draft of the evaluation report. This Level of Effort will be provided after departure from Uganda. The level of effort of the national consultants contracted for this evaluation will include several days for final write up and forwarding of the revised relevant sections to the Team Leader for incorporation into the final report, which will be submitted in both hard copy and electronic format to Africare/Washington.

ANNEX VI

Africare's Program in Uganda

Africare is also developing a project proposal for funding under the SSA-CP (Sub-Saharan Africa Challenge Program) concerning the **Lake Pilot Learning Site** Africare is aspiring to get involved in with other partners who are spearheaded by the various Task Forces lead by NARO-ICRAF, CIAT & CIP is within the East & Central Africa (ECA) sub-region of the SSA-CP. The SSA-CP has been designed to contribute solutions to three major issues facing the agricultural sectors in Africa: the failure of agricultural markets; inappropriate policies; and natural resource degradation. The approach would be through the Integrated Agricultural Research for Development (IAR4D), and this is in response to the goals of the New Partnership for African Development (NEPAD) to improve agricultural productivity as the engine for economic growth. In this connection ASERECA identified the Lake Kivu Pilot Learning Site (LK-PLS) so as to enable the SSA-CP to link and support the objectives of the ECA countries with respect to modernization of agriculture in the sub-region. The KL-LPS was selected to focus on areas with high bio-physical potential, but endemic poverty due to limited marketing-oriented of the agricultural sector. The SSA-CP envisages anew paradigm, IAR4D that fosters synergies among disciplines and institutions, along the renewed commitment to change at all levels from farmers to national and international policy makers. The research & development objectives of IAR4D are focused on the following;

- Develop technologies for sustainable intensification of subsistence oriented farming systems;
- Develop smallholder production systems that are compatible with sound natural resource management.
- Improves the accessibility and efficiency of markets for smallholder and pastoral products; and

Catalyze the formulation and adoption of policies that will encourage innovation to improve the livelihoods of smallholder and pastoralists.