



S P E E D

Support for Private Enterprise Expansion & Development

**FISHERIES CONSULTANCY INTERIM REPORT
3 SEPTEMBER TO 18 DECEMBER 2001**

BY

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Chemonics International Inc.

**A USAID-funded Project
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Mr. Patrick Nugawela
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Dear Mr. Nugawela,

Please find herewith a Fisheries Consultancy Interim Report-3 September to 18 December 2001 as requested.

Yours faithfully,

E.S. Kanyike
National Fisheries Consultant
SPEED

c.c. Chief of Party
SPEED

Fisheries Consultant Progress Report-3 September to 18 December 2001

Table of Contents

	Page
Executive Summary	
Introduction-----	1
Main activity: 1 Developing support to improve production, value, quality and market opportunities for the existing fisheries harvest-----	1
Task 1.1 Fish post harvest losses-----	1
Task 1.2 Certification of fish processing factories-----	1
Task 1.3 Production of quality assurance and awareness training module and course for stake holders using the module on quality assurance awareness-----	2
Task 1.4 Identifying new markets for existing and for new products within the European Union, Middle East and Asia-----	2
Task 1.5 Identification of high value fish products and production----	2
Task 1.6 Support for the participation in international exhibitions----	2
Task 1.7 Identification of local and regional markets-----	3
Main activity 2 Support for the improvement of infrastructure facilities particularly the development of a model fish landing site in remote islands-----	3
Main activity 3 Increase business opportunities for MSME's-----	4
Main activity4 Facilitate access to finance-----	5
Main activity 5 Strengthening sector intermediaries-----	5
Main activity 6 Support to develop commercial fish farming-----	5
Main activity 7 Data base compilation-----	7
Main activity 8 Update of SPEED fisheries strategy work plan-----	8
Main activity 9 Catch assessment survey-----	8
Main activity10 Preparation of scopes of work-----	8
Summary of fisheries consultancy report	
Annex 1-Scopes of work	
Annex2-Draft memoranda of understanding	

Executive Summary

The report describes what has been possible to accomplish in the three months, 3rd September to 18 December 2001. Scopes of work have been prepared for various activities and these are:

1. Scope of work for a consultant to carry out a bankable feasibility study for M/S Intercontinental Investment Company Limited to acquire the assets of Clovergem Fish and Foods Ltd
2. Scope of work for a consultant to carry out an assessment of post harvest losses and identification of appropriate measures to minimize losses and maximize fuller utilization of existing catch of Nile Perch (*Lates niloticus*) and the Nile Tilapia (*Oreochromis niloticus*) from the Uganda waters of Lake Victoria
3. Scope of work for a consultant to carry out a design and development of a proposal for the establishment of a pilot fish landing site on a remote island on Lake Victoria
4. Scope of work for STTA for a feasibility study for a pilot commercial fish farming project in Uganda
5. Scope of work for consultancy on implementation of ISO 9000:2001, HACCP and GMP for selected fish processing companies in the fisheries sector.
6. Scope of work for quality assurance and awareness training consultancy
7. Scope of work for STTA for development of locally designed inboard diesel engine boats for fishing and fish transport according to the requirements of the Hazard Analysis of Critical Control Points (HACCP) system.
8. Scope of work for identification of local and regional markets (Rwanda, Congo, Kenya, Sudan etc)

The assessment of post harvest losses will have to be carried out with interested parties. This study aims at lessening the losses that occur all along the fish supply chain, from the hauling of nets on the lake to the point of export in the case of the exporters and to the consumer in the case of the local market. Once the losses are minimized there will be more fish for export and the local market.

Certification of fish processing companies now needs a consultant to prepare willing companies for the award of ISO 9000:2001. A scope of work for training upstream in quality assurance and awareness along the fish supply chain is ready. A consultant is now required to carry out work.

The COMPETE consultant has recommended to have new products with “value added” higher than the freight charges for the products to be competitive on European market. SPEED can now take up the development of new high value fish products with companies which may be interested in this line.

A European international exhibition is due to take place from 23th to 25th

April 2002 while the Asian international exhibition is scheduled for 25th to 27th November 2002. Intending companies to participate in these exhibitions have been advised to rent

one stall to save on costs. An international consultant will be required to prepare the intending companies for the exhibitions selected.

A scope of work for a local consultant to identify local and regional markets is ready. Approval of the scope of work is required to recruit a consultant.

The implementation of the pilot fish landing site at Golofa on Lolwe Island on Lake Victoria has been closely followed and SPEED staff have visited the site where developments are going to take place. Registration of the fishermen's company will be required as well as the acquisition of the land where developments are going to take place.

On the increase of business opportunities; M/S Intercontinental Investment Company limited has been supported in carrying out a bankable feasibility study to acquire the assets of Clovergem Fish and Foods Ltd. This was a requirement for accessing financing.

SPEED has supported the Uganda Fish Processors and Exporters Association to make a consultant available for a website development strategy for the association. The consultant has finished work for the first mission.

A scope of work has been prepared for a pilot fish commercial fish farming project and a workshop on fish farming held on 26 September 2001. The idea of commercial fish farming has got three prospective investors. It has been decided that these will do better if they first make a study visit to the United States of America to study commercial fish farming there. On return they can then participate in the formulation of scopes of work for a consultant they need in commercial fish farming. The visit to the United States of America needs to be expedited for the investors to embark on their projects.

There are high priced species already in the country which are farmed in other parts of the world These include Rainbow Trout in River Bukwa and River Sipi on Mt Elgon and in River Mubuku on Mt Ruwenzori. It is only necessary to have an investor interested in farming this species and bring in an expert to work with the investor to carry out Trout commercial farming. Likewise the culture of the Luisiana crayfish which is at Kajjansi Aquaculture Research and Development Centre is currently selling at Shs 5000/= a Kilogramme unshelled to the consumer. These are exotic species which were introduced to this country long ago . They should be farmed and have people make money.

With regard to catch assessment survey; a project document is being written which will be the basis for funding. Information on catches from all bodies of water is necessary as resource base factor for investment in fisheries.

Data has been compiled on activities on Lake Victoria with regard to number of fishermen, number of fishing boats etc. While data on export of processed fish products for January to June 2001 has also been compiled. This is 14,510.50 metric tones worth

US\$ 18,846,199.50 (f.o.b.) to European Union and 5,089.64 metric tones worth US\$ 10,883,530.20 non-European Union countries.

The SPEED Fisheries Sector Strategy Work Plan has been updated. It needs now further consideration by SPEED.

Fisheries Consultancy Progress Report – 3 September to 18 December 2001

Introduction

This report covers a period from 3 September to 18 December 2001 and it is based on the work which has been done on the tasks set out for the consultancy and the work plan which was provided by the consultant at the beginning of the period. The report considers the main activity and tasks there under where applicable.

Main Activity: 1. Developing Support to Improve Production, Value, Quality and Market Opportunities for the Existing Fisheries Harvest

Task: 1.1 Fish Post Harvest Losses Survey

Progress Made

(a) A scope of work for “Assessment of post harvest losses and identification of measures to minimize losses and maximize fuller utilization of existing catch of the Nile Perch (*Lates niloticus*) and the Nile Tilapia (*Oreochromis niloticus*) from the Uganda waters of Lake Victoria” has been finalized.

(b) SPEED Intervention package – “Assessment of post harvest losses of selected commercial species from Lake Victoria” has been finalized.

(c) SPEED package implementation schedule including the resultant minimization measures project.

Remaining Gaps

Selection of a service provider to carry out the assessment of post harvest losses of the Nile Perch (*Lates niloticus*) and the Nile Tilapia (*Oreochromis niloticus*) with interested stake holders and implementation of the resultant post harvest losses minimization project.

Task: 1.2 Certification of Fish Processing Factories

Progress Made

Scope of work for “Consultancy for implementation of ISO 9000: 2001, HACCP and GMP for selected fish processing companies in the fisheries sector” has been prepared.

Remaining Gaps

Recruitment of a consultant to prepare the companies interested in being awarded certification of ISO 9000: 2001 and hiring of a reputable company commissioned to award ISO 9000:2001.

Task: 1.3 Production of Quality Assurance and Awareness Training Module and Course For Stakeholders Using the Module on Quality Assurance Awareness.

Progress Made

The scope of work for “ The quality assurance and awareness training consultancy” is ready.

Remaining Gaps

Approval of the scope of work and recruitment of a consultant to work out a quality assurance and awareness training module and to carry out the training of stakeholders up stream.

Task 1.4 Identifying New Markets for Existing and for New Products Within the European Union, Middle East and Asia.

Progress Made

There is coordination with COMPETE on this project. The COMPETE consultant working on this project has made observations while in Europe and he has said, in a workshop organized by COMPETE, that the “value added” on a new product must far exceed the freight charges if an advantage on the European market is to be obtained in money terms.

Remaining Gaps

Studies can now be initiated by SPEED in collaboration with fish processing companies which are interested in new products and see how new products can be produced and marketed abroad profitably.

Task 1.5 Identification of High Value Fish Products and Production

Progress Made

This has been carried out COMPETE consultant who visited Europe. He has emphasized prepacked frozen portions headless and gutted vacuum products which must be certificated and microbial specifications provided. Brand names are also required.

Remaining Gaps

SPEED should take up studies in product development and packaging in collaboration with fish processing companies to increase value to Uganda fish products.

Task 1.6 Support for Participation in International Exhibitions

Progress Made

A COMPETE consultant who has been in Europe on a marketing assignment has indicated the international exhibitions which are due to take place. These are 23 to 24

April 2002 for the European exhibition and 25 to 27 November 2002 for the Asian exhibition. The consultant has emphasized that the companies which are interested in participating in these exhibitions must have manuals about their companies and their products. He recommends UFPEA member to hire one stall to save on costs.

Remaining Gaps

International certification of companies which want to participate in international exhibitions will be desirable. SPEED's assistance in this line will be essential.

Task 1.7 Identification of Local and Regional Markets (Rwanda, Congo and Sudan etc)

Progress Made

A scope of work for "Identification of local and regional markets (Rwanda, the Democratic Republic of Congo etc)" is ready.

Remaining Gaps

Approval of scope of work and recruitment of a local consultant to carry out the study.

Main Activity: 2 Support for the Improvement of Infrastructure Facilities Particularly the Development of a Model Fish Landing Site in Remote Islands.

Progress Made

A group of fishermen on Lolwe Island on Lake Victoria have formed themselves into a Company, the Lolwe Golofa Community Development Projects Ltd which, in association with M/S Gomba Fishing Industries Ltd will invest in the development of a model pilot fish landing on the remote island of Lolwe at Golofa fish landing site. SPEED has assisted in streamlining the Memorandum and Articles of Association of the fishermen's company. It is now in its final stages of registration. Discussions have been held between SPEED and the fishermen who have confirmed their determination to invest in the development of Golofa fish landing site and to contribute to the cost of the feasibility study for the development of the site to a tune of 30%. The island is located in Bugiri District and SPEED together with the fishermen have called on the Bugiri District officials who have agreed to support the development of the fish landing site to its successful execution.

A final version of a scope of work for "Development of a Project Proposal for the Establishment of a Pilot Landing Site on the Remote Island on Lake Victoria" has been prepared together with the SPEED Interventions Package Document. A proposed package implementation schedule has also been prepared. SPEED staff have visited Lolwe Island and inspected the site at Golofa where developments are going to take place.

Remaining Gaps

The following need to be taken up for the execution of the project.

- Discuss the financing of the project
- Approval of the scope of work
- Support the registration of the fishermen's company
- Identification and selection of a service provider for the feasibility study
- Discussion of a draft feasibility study report
- Acceptance of the final feasibility study report
- Support for acquisition of funds for construction
- Request for proposal for a contractor
- Selection of an engineering supervisor and a contractor
- Supervision of construction
- Training of fish landing site management personnel
- Training of fishermen in good fish handling practices(GHP)
- Clearance with government officials for completion of construction
- Launching of Lolwe Golofa fish landing site

Main Activity 3.Increase Business Opportunities for MSME's

Progress Made

Support was given to M/S Inter-Continental Investment Company Limited as a medium size enterprise to carry out a feasibility study required for financing to acquire the assets of Clovergem Fish and Foods Ltd. The study was carried out by M/S Aclain Africa Limited.

A scope of work has been prepared for "The Development of Locally Designed Inboard Diesel Engine Boats for Fishing and Fish Transport According to the Requirements of the Hazard Analysis of Critical Control Points (HACCP) System". These boats will be built by local boat yards with the assistance of an expert in boat building. Feasibility studies for their building/manufacture and their economic operation will be carried out by an expert boat builder together with an economist.

Remaining Gaps

It will be necessary to write "typical" feasibility studies which can be modified to be used by micro and small enterprise entrepreneurs for areas like acquisition of fish transport insulated pickups/vans, refrigerated trucks, insulated fish boxes for transportation of fish on open pickups so as to meet the Hazard Analysis of Critical Control Points (HACCP)system requirements. Similar scopes of work will need to be prepared for SPEED clients in the fields of establishment of ice plants, establishment of vermin proof

stores for cured fish. etc. This is an area where women and school leavers will benefit from the project when they engage in fish marketing and artisanal fish processing.

Main Activity 4. Facilitate Access to Finance

Progress Made

Through the support of M/S Inter-Continental Investment Company Limited in carrying out a feasibility study to acquire the assets of M/S Clovergem Fish and Foods Limited is a way SPEED has facilitated access to finance.

Remaining Gaps

Facilitation of access to finance will come with increase of business opportunities for MSME's indicated in Main Activity 3 above.

Main Activity 5.Strengthening Sector Intermediaries.

Progress Made

An international consultant has been made available in the field of information and communication technology (ICT) for the benefit of the Uganda Fish Processing and Exporters Association (UFPEA). A website will now be set up for the association to assist members of the association to take advantage of opportunities of good prices that may exist on the international market. The Uganda Fisheries and Fish Conservation Association (UFFCA) have had discussions with the consultant and they have expressed interest in the website.

Remaining Gaps

The Uganda Fisheries and Fish Conservation Association (UFFCA) needs capacity building . They have been asked to indicate areas where they would need assistance so that they can serve their members better. They are working out a document on this so that a scope of work can be worked out for a consultant to be engaged to provide the necessary advice on UFFCA capacity building.

Main Activity 6. Support to Develop Commercial Fish Farming

Progress Made

1-A workshop on fish farming was held 26 September 2001 at SPEED offices. Representatives came from the Department of Fisheries Resources, Fisheries Resources Research Institute, fish farmers, Uganda Fish Processors and Exporters Association, COMPETE, Makerere University, National Environmental Management Authority, feeds manufacturers and the Uganda Investment Authority. It was agreed that the group which met on that day forms the fish farming group which will be discussing fish farming matters under the SPEED Project.

2-A scope of work for “STTA for the Preparation of a Pilot Commercial Fish Farming Project Document” has been prepared

3-Three willing investors in commercial fish farming have been identified and it has been decided that in order to make a meaningful scope of work with them for a consultant to carry out feasibility studies for them, they should visit commercial fish farmers in the United States of America to understand commercial fish farming from there. Then a scope of work for a consultant to carry out feasibility studies for them according to their individual needs can be formulated with these investors. Discussions on this matter have been held with the identified investors.

4- A Memorandum of Understanding has been signed on 6th August 2001 between the Department of Wild Life and Animal Resources – Faculty of Veterinary Medicine, Makerere University and M/S Sunfish Farm Ltd for the training of commercial fish farmers and a draft syllabus for the course has been drawn up.

5- Suggestions have been made on the introduction of high valued fish species like the Channel Catfish and the crustacean *Peneus monodon* for fish farming. The Commissioner for Fisheries has been approached on this. He said that his hands are tied by international organizations which are against introduction of foreign species into the country.

Remaining Gaps

The following need to be followed up

1-Finalise arrangements for the visits to the United States of America by the intending investors in fish farming so that they can come back immediately and start working on their fish farming projects.

2- Finalize the scope of work with the intending investors for a consultant to come to Uganda and carry out feasibility studies for the establishment of commercial fish farms for the investors.

3- Look into the possibility of Rainbow Trout commercial fish farming in Uganda. This fish is already in the River Sipi and River Bukwa on Mt Elgon and River Mubuku on Mt Ruwenzori . Sport fishermen are licensed and they fish for this fish on these rivers. The methods for culturing this high priced Rainbow Trout are known already. We only need an expert to come to Uganda to demonstrate the farming of this fish with a willing investor. Perhaps this can be done first with the National Agricultural Research Organisation (NARO) and establish a turn-key fish farm which can be let out on a concessionary basis to a competent business person on the understanding that it will act as a demonstration fish farm for the species.

4- The culture of the Louisiana crayfish (*Procambarus clarkii*) on commercial lines can also be looked into. The species is already in the country at Kajjansi Aquaculture Research and Development Centre and it is selling at Shs 5000/= per Kilogramme

unshelled to the consumer. This is a high priced species SPEED has been looking for. SPEED can develop a turn-key fish farm in collaboration with NARO and let it out to a competent business person on the understanding that it will act as a demonstration fish farm for this species.

5- The training of private fry producers as investors should be looked into because the supply of fry has been the function of government but the government institutions which are responsible have not met the demand.

6- The culture of ornamental fish for export should be supported as a private enterprise. This being a foreign exchange earner.

Main Activity 7.Data Base Compilation

Progress Made

The following data has been compiled for Lake Victoria from a survey done in 2000.

- 597 Fish landing sites
- 15544 Fishing boats
- 12848 Paddled boats
- 665 Sail powered boats
- 910 Transport boats
- 34889 Fishermen
- 815 Fisheries personnel
- 291329 Gill nets
- 254453 Long lines
- 811 Beach seines
- 1276 Cast nets
- 11349 Fish traps
- 2452 Mosquito nets
- 9770 Boats using nets
- 821 “ “ long lines
- 811 “ “ beach seines
- 801 “ “ cast nets
- 830 “ “ hooks and lines
- 557 “ “ fish traps
- 2446 “ “ mosquito nets
- 78 Fish stores
- 221 Boat repair facilities

Fish processing industry 2001 (January to June) export figures*

Export to European Union	Weight (Tonnes)	14510.50
	Value (US\$)	18,846,199.50 (F.O.B.)

Export to non-European Union countries	Weight(Tonnes) Value(US\$)	5089.64 10,883,530.20 (F.O.B.)
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* Source: Department of Fisheries Resources

The Commissioner for Fisheries has promised to attach an officer to SPEED project to facilitate easy communication to obtain data that may be needed. But he needs a communication from SPEED requesting for such an officer.

Remaining Gaps

It will help very much to collect up to date data when an officer is appointed to work with SPEED.

Main Activity 8.Update of SPEED Fisheries Strategy Work Plan – 2002

Progress Made

An update of the fisheries strategy work plan has been made.

Main Activity 9. Catch Assessment Survey

Progress Made

A project paper is being prepared to include to include the financial aspect of the project. The will carry out an aerial count of all fishing boats on all bodies of water in the country to supplement catch sampling data which will be carried out on the ground on all bodies of water by enumerators.

Remaining Gaps

Finalization of the project write up. Information will be required on the indicative cost of hiring an air craft, insurance of aerial counting personnel , logistics etc.

Main Activity 10. Preparation of Scopes of Work

Progress Made

The following scopes of work have been prepared

- Scope of work for a consultant to carry out a bankable feasibility study for M/S Intercontinental Investment Company Limited to acquire the assets of Clovergem Fish and Foods Ltd.

- Scope of work for a consultant to carry out an assessment of post harvest losses and identification of appropriate measures to minimize losses and maximize fuller utilization of existing catch of Nile Parch (*Lates niloticus*) and the Nile Tilapia (*Oreochromis niloticus*) from the Uganda waters of Lake Victoria
- Scope of work for a consultant to carry out a design and development of a proposal for the establishment of a pilot fish landing site on a remote island on Lake Victoria..
- Scope of work for STTA for a feasibility study for a pilot commercial fish farming project in Uganda.
- Scope of work for consultancy on implementation of ISO 9000: 2001, HACCP and GMP for selected fish processing companies in the fisheries sector.
- Scope of work for quality assurance and awareness training consultancy.
- Scope of work STTA for development of locally designed inboard diesel engine boats for fishing and fish transport according to the requirements of the Hazard Analysis of Critical Control Points (HAACP) system.
- Scope of work for identification of local and regional fish markets (Rwanda, Congo, Kenya Sudan etc).

(See Annex 1)

The following draft Memoranda of Understanding (MOU) have been prepared for approval and signing between SPEED and other organizations.

- A general MOU between SPEED and the Uganda Fish Processors and Exporters Association (UFPEA) for future cooperation between the organizations
- MOU between SPEED and Lolwe Golofa Community Development Projects Limited together with Gomba Fishing Industries Limited for the development of a pilot fish landing site at Golofa on Lolwe Island of Lake Victoria
- MOU between SPEED and the Uganda Fish Processors and Exporters Association (UFPEA) together with the Uganda Fisheries and Fish Conservation(UFFCA) for cooperating in the website development for both associations

(See Annex 2)

ANNEX1 – SCOPES OF WORK

SPEED Scope of Work
Assessment of Post Harvest Losses and Identification of Appropriate Measures to Minimize Losses and Maximize Fuller Utilization of existing Catch of Nile Perch (*Lates niloticus*) and the Nile Tilapia (*Oreochromis niloticus*) from the Uganda Waters of Lake Victoria.

Background:

The mission of the Support for Enterprise Expansion and Development (SPEED) Project is to support the economic growth of Uganda, through the development and expansion of sustainable business opportunities for micro, small, and medium enterprises (MSMEs). This will be achieved through the implementation of a series of activities focused on selecting key sectors, identifying market linked opportunities for MSMEs, and strengthening local capacity to provide Business Development Services (BDS) to MSMEs.

One of the guiding principles in the implementation of SPEED is the sector focus approach. The project's major components currently provide support to the fisheries, cotton, coffee, and dairy sectors. In addition, SPEED works with sector intermediaries and associations to improve their service delivery and capacity to support their members.

SPEED's fisheries sector support strategy is designed to increase revenue from fisheries exports by maximizing the full utilisation of the existing exportable fish catch from Uganda's lakes. This can be achieved through:

- Increasing quality supplies from remote islands by supporting sector stakeholders in their efforts to build appropriate landing sites;
- Increasing value addition in the industry;
- Supporting quality assurance improvements at the processing and fish supply chain levels;
- Supporting the sector to reduce post harvest losses and maximize fuller utilization of the existing catch; and
- Training fishermen, collectors, and landing site workers on best fish handling practices.

This Scope of Work (SOW) is specifically designed to identify appropriate measures that will lead to a reduction of post harvest losses and fuller utilization of available resources. Accurate information regarding the current level of losses and their causes will be collected through a survey, which will be carried out in the Lake Victoria region. It will be limited to Nile Perch (*Lates niloticus*) and Nile Tilapia (*Oreochromis niloticus*), as these are the premium fish species from which export products are obtained.

Rationale

There is currently no accurate information on post harvest losses either in total or at the various levels of the fishing industry. A figure of 10 to 30 percent has been suggested as an annual post harvest loss for the whole country. Now that the export of fish products from Nile Perch (*Lates niloticus*) and the Nile Tilapia (*Oreochromis niloticus*) has become of great importance to the Uganda's economy, accurate information and data on the causes of post harvest losses is of primary importance in order to identify the appropriate measures to minimize them.

The Uganda Fish Processors and Exporters Association (UFPEA) and the Uganda Fisheries and Fish Conservation Association (UFFCA) have expressed an interest in participating in this survey. UFFCA has members all along the shore of Lake Victoria, who are obliged to know why post harvest losses occur at the various levels of the supply chain. They are all very interested in measures that can lead to the reduction of these losses and thereby also result in increased revenue for local fishermen. The Government of Uganda (GOU) is also concerned about reducing post harvest losses in the sector, and is interested in implementing appropriate measures to reduce them. The Department of Fisheries will represent the interests of the GOU's in this effort.

SPEED has held a series of discussions with key sector stakeholders, to facilitate the task of carrying out the post harvest losses survey. A determination of where the losses take place and how they happen will result in a series of recommended measures for minimizing them. This will lead to a fuller utilization of the limited fisheries resources and will benefit the fish processing industry through increased supplies.

Proposed implementation strategy for the Post Harvest Losses Assessment

Speed will launch the survey in close collaboration with the Department of Fisheries, UFPEA, and UFFCA. SPEED's contribution will come in the form of short-term technical assistance to carry out the survey. UFPEA will arrange access to factories for the consultant, while UFFCA will provide enumerators for the survey. The consultant will train members of UFFCA in survey methodologies, and UFFCA will provide a counterpart to work closely with the consultant. This will result in capacity building within UFFCA in this type of work. The consultant will hold discussions with the Commissioner for fisheries and the above associations with regard to the survey, and come to agreement with them on the mode of operation. Since both UFPEA and UFFCA will benefit from the increased supply of fish once the post harvest losses have been contained, they will be expected to contribute to the cost of the study.

Task

1. Hold discussions with the UFPEA, UFFCA, the Commissioner for fisheries, SPEED, and COMPETE to identify the roles and responsibilities of each stakeholder in the implementation of the survey.

2. Provide a sampling plan of the survey, covering at least two seasons of one and half months each within a period of six months.
3. Review the code of practice for handling, preservation, processing, and storage currently in force.
4. Determine the cause of post harvest losses, supported by clear photographs from the beginning of the fish supply chain to the final user of the fish or fish product, indicating weight and percentage lost at each level.
5. Provide the volume of losses by species, fish landing site, and district and describe the causes of losses and indicate weigh and percentage in all cases.
6. Report on the volume of losses, taking into account the sources by species from short, medium and long distance to the final user.
7. Determine a value of the post harvest losses obtained.
8. Recommend remedial measures to eliminate the causes of post harvest losses at various levels of the fish supply chain, identify/suggest the stakeholders responsible for implementation and indicate the cost implications involved.
9. Recommend improvements in the present code of practice for fish handling and preservation, processing, storage, transportation and retailing.
10. Report on the estimated annual total post harvest losses by fish landing site and district on the lake.
11. Provide an annual total post harvest weight of fish lost by species, as a percentage of annual catch and of the total catch from the lake by fish landing, district and the whole lake. The total post harvest loss, as a percentage of the national annual catch will also be given.
12. Submit the findings of the assessment and recommendations to sector stakeholders at two and half-day workshops at the end of each season.
13. Validate the recommendations made at the second workshop.
14. Produce a comprehensive interim progress report on post harvest losses for each season of the survey and a final report on the overall assignment incorporating the recommendations made during the workshops.

Deliverables

A report of the consult will contain the following :

- Sampling survey plan according to seasons for the assessment of post harvest losses of Nile Perch and the Nile Tilapia fished from Lake Victoria.
- Post harvest losses and causes at all levels along the fish supply chain indicating weight and percentage, with photographs related to each level of losses identified.
- The volume of losses by species, fish landing site, and district, indicating weight and percentage.
- Post harvest loss down grading value.
- An annual total post loss of Nile Perch and the Nile Tilapia lost by weight and as a percentage of the annual estimated catch from Lake Victoria.
- Remedial measures to eliminate causes of post harvest losses at all levels.

- Outlines of SOWs to implement the most important remedial measures identified to minimize post harvest losses, including the recommendations on the appropriate stakeholders responsible for their implementing and the cost implications .
- Recommendations for an improvement in the present code of practice for fish handling, preservation, processing, storage, transportation and retailing.

Selection of a Consultancy Firm or Organization

Interested firms or organizations are required to submit a proposal on how they will carryout the assignment in view of the tasks outlined under the SOW.

Resource Requirements

A local consulting firm or a group of local consultants composed of a fish technologist (Team Leader) with confirmed experience in assessing post harvest losses at different levels, and the causes of losses, as well as statistician with significant experience in sampling techniques. Enumerators trained to carryout surveys will assist the experts. It is expected that the consultants will collaborate with members of UFFCA, field extension workers of the district extension staff, and members of the fishing communities. The services of an economist may be required to finalize the SOWs on implementation of remedial measures recommended.

Results Multiplier Effects

- Increased supply of quality fish to processors and for the local market, possibly by as much as 10 to 20%, through maximization of the quality of the existing catch.
- Reduction of losses at the processing level and increase of exportable processed fish.
- Increased income to processors and suppliers of Nile Perch and Nile Tilapia from Lake Victoria, once the causes of post harvest losses are identified and minimized.
- Increased business opportunities to other linkage MSMEs such as ice producers, packaging and insulated material and transporters.
- Tangible data, which can be used for investment purposes, to assess the required inputs to bring the fish, which can be used on other lakes to estimate post harvest losses.

Duration

The consultant will be expected to carry out the assignment in three months, within a period of six months, using sampling techniques, and covering two seasons of the year.

This will be indicated in the consultant's proposal.

SPEED BDS Unit

Scope of Work for a Business Plan

Client: Inter-continental Investment Company Limited

Background

- Inter-continental Investments Company Ltd. was established in the year 2000 with a primary objective to invest in export oriented projects. The firm has three shareholders namely Mohammad Magid Bagalaaliwo, Bashir Balozi, and Adlan Nalulyo. Mohammad Agid Bagalaaliwo is the Chairman and founder of Century Bottling Company Lt. a joint venture with Coca Cola International and South African Bottling Company; Bashir Balozi is the Chairman of Balozi Services Industry Ltd. and Adlan Nalulyo is doing her PHD in Oxford University in Electrical and electronics.
- Inter-continental Investment Company has already invested in three projects:
De Semalain Incorporation Ltd. which deals in coffee processing and with a production capacity of between 120 and 180 tons per day. Natural Food Industries Ltd. deals in cotton ginning and with a ginning capacity of 40 bails per day. Intercontinental Investments Company has 60% share in the 1st Insurance Company Ltd.
- Inter-continental Investments Company Ltd. has already purchased the former M/s Colvergem Fish and Foods Ltd., situated at Entebbe, which was under receivership. The company has been closed for approximately one year. The firm was purchased at a cost price of US\$ 2.1 million and Inter-continental Investment Company paid US\$ 1 million and the balance of US\$ 1.7 million will be paid by 8th November 2001. the company has a factory with fish processing capacity of 50 tons per day. The plant is located two kilometres away from Entebbe International Airport.
- Inter-continental Investment Company intends to access medium/long-term loan of US\$ 1.7 million to pay off the balance for the company purchase from Stanbic Bank Uganda Ltd. In addition, borrow funds from Bank of Uganda Development Finance Division under Apex Fund Facility for rehabilitation of the factory in accordance with European Union standards and as well as working capital. In order to access finance, the company is requesting for SPEED project to support the preparation of bankable business plan.

Objective

SPEED project intends to contract a consultancy firm to prepare a bankable business plan for Inter-continental Investment Company. The client has acquired a fish-processing

factory and needs support. The need to support expansion and development of enterprises in this sector fits within the overall SPEED fisheries sector strategy, which focuses on increasing the quality and quantity of fish exports. In addition, it fits within the SPEED BDS strategy to expand and promote the use of Business Development Service providers in the sector. The activity would contribute to the revival of the fish processing plant resulting into creation of employment opportunities, and increasing export value.

Tasks

The successful consultancy firm will coordinate with the BDS advisor, National Fisheries Consultant and other SPEED staff in undertaking the consultancy. The consultancy firm will undertake the following tasks in preparing a business plan:

- Provide an assessment of the past performance of the management which operated the plant.
- Carryout an valuation of the current assets of the investment on site e.g. land, buildings, machinery and equipment, motor vehicles, furniture and fittings, boats service condition and storage system etc.
- Determine civil works, machinery, plants, spare parts among others required for the rehabilitation of the establishment and give quotations.
- Determine the production capacity of the plant.
- Report on the fish stocks available in Lake Victoria and Lake Kyoga and the projected fish supply from the lakes.
- Report on the availability of skills levels and cost of local labour for the company operations including; management, fish catching and target species, fish processing and packaging, equipment maintenance and repair.
- Determine manpower organization and management.
- Determine whether the sponsor company's activities are in compliance with the business laws of the country and report on the existing laws on fishing, handling preservation and processing of fish.
- Report on specification of fish processing, availability of packaging materials and supply flow through the factory.
- Report on markets and prices for the company's products locally, regionally, Middle East, and Europe Far East as well as North America (products, the target market, proposed market organization, existing supply, price and demand situation, potential marketing difficulties, sales projection). Show the presence of transport for the products to the markets.
- Make an environmental impact assessment report which is accepted by National Environmental and Management Authority (NEMA).
- Give an analysis of competitors and development of competitive strategy.
- Provide the economic benefits which accrue from the company's operations of the plant to the country.
- Develop a business plan indicating capital investments, projected cash flows, operating costs, projected income statement, balance sheet, sensitivity analysis etc to prove the operations of the sponsor company will be profitable for over 5 years.

Deliverables

- A comprehensive business plan which should contain the following ;
 - Findings and recommendation on past performance assessment
 - Asset valuation status report.
 - Rehabilitation requirements (inputs)-Bills of Quantity
 - Estimate of fish stocks in Lake Victoria and Lake Kyoga
 - Manpower plan and management
 - Production capacity of the plant.
 - Report on legal status and compliance with Uganda's laws,
 - Fish processing specification, supply and packaging required for export.
 - Market research report,
 - Accepted Environmental Impact assessment report and certificate,
 - Competitive analysis status report,
 - Economic impact of the project, and
 - Quantitative projections tables with figures for financial planning and analysis.

Consultants

A reputable consultancy firm with experience in preparing business plans especially for fish/food-processing industries is required.

The successful consultancy firm should have :

- A Fish Technologist with at least (ten) 10 years consulting experience in fish processing and quality assurance.
- International Marketing Expert with at least (ten) 10 years consulting experience in marketing of processed fish/food products.
- Financial Analyst with at least (ten) years consulting experience in financial appraisal and management.
- Refrigeration Engineer with extensive experience in refrigeration for fish/food industry. The expert should have hands on experience in installation, maintenance, and repair of storage cooling facilities.
- Asset Valuation Expert with at least (ten) 10 years experience in conducting plant, building, machinery and equipment valuations.
- Human Resources Expert with at least (ten) 10 years experience in planning and developing human resources system.

Duration

The study and submission of the final report is expected to take only 30 days. The successful consultancy firm will start to implement the scope of work as soon as the SPEED approves technical proposal from the consultancy firm, Memorandum of Understanding and fix price contract.

SPEED BDS Unit___ Prepared by NFC/HT. 4th September 2001

SPEED Scope of Work

Design and Development of a Project Proposal for the Establishment of a Pilot Fish Landing Site on the Remote Islands on Lake Victoria

The mission of the Support for Private Enterprise Expansion and Development (SPEED) Project is to support the economic growth of Uganda, through the development and expansion of sustainable business opportunities for micro, small and medium-enterprises (MSMEs). This will be achieved through the implementation of a series of activities focused on selecting key sectors, identifying market-linked opportunities for MSMEs, and strengthening local capacity to provide Business Development Services (BDS) to MSMEs.

SPEED developed a fisheries sector business development program in collaboration with the Uganda Fish Processors and Exporters Association (UFPEA), the USAID sponsored Competitive Private Enterprise Trade and Expansion (COMPETE) project, and key sector stakeholders. SPEED interventions to support the fisheries sector focus on:

- Increasing quality of fish supplies particularly for export processing,
- Facilitating the sector to reduce post harvest losses and maximize fuller utilization of the existing catch
- Increasing value addition in the industry and improving export market opportunities.
- Facilitating quality improvements at the processing and fish supply chain levels;
- Supporting the development of multiplier effect of the sector through development linkages with other related activities; and
- Developing alternative sources of quality fish supplies such as fish farming for exports and local market.

To assist the sector to increase quality fish supplies for export processing and for the local market, one of SPEED's activities will focus on working with the private sector to improve infrastructure facilities. Specifically, SPEED will work to develop a model landing site in the remote islands of Lake Victoria, which will be linked with a shoreline landing site.

In this effort, SPEED is already working with fishermen and fish collectors on Lolwe Island, and a local fish processor, to design and develop a comprehensive proposal for the establishment of a model island site. Following completion of this proposal, SPEED plans to support the group of fishermen and collectors on the island, known as Lolwe Golofa Community Development Projects Ltd., build and establish the site. Concurrently, SPEED will work to link the island landing site with a shoreline-landing site at Wakawaka, which will be developed by Gomba Fishing Industries, Ltd. This model will serve as a pilot project, which can be replicated in other areas.

Rationale

A significant part of the local fish catch comes from the remote islands of Lake Victoria. Unfortunately, it is estimated that large quantities of fish from the islands do not meet the quality requirements of either export processors or the local market. In addition, it is also reported that fishermen in the island do not receive correct market prices for their fish catch, due to poor conditions of preservation and storage facilities. As a result, the rate of post harvest losses of fish is high. This situation is mainly due to the absence or poor condition of landing sites and other facilities in the islands.

The installation of permanent facilities at island landing sites with adequate infrastructure will encourage more fishermen to supply better quality fish to collectors. In addition, a landing site on an island will have tremendous potential for multiplier effects through linkage activities such as storage and preservation of fish, boat building and repair activities, ice production and storage, and fish net repair. The development of the landing site will also result in direct employment opportunities, and indirect employment through the development of linkage activities. It is estimated, that each landing site will create 40 to 50 additional employment opportunities. Further, the population in the island will benefit from increased tax revenues. Therefore, the design and development of an appropriate replicable model of a landing site that is sustainable and manageable by private sector fishermen and processors will have a significant impact on the development of fishing industry in the islands, and result in an increased supply of quality fish to processors and the local market.

In order to establish a pilot island landing site and link it with a shoreline landing site, SPEED held extensive discussions with fishermen in the Lolwe Island, a processor in Jinja, and UFPEA. Fishermen on Lolwe Island in Bugiri district operate more than 400 fishing boats and work with more than 20 fish collectors. It is estimated that the island has a supply potential of more than 100 tons of fish per day, but there is no infrastructure in place to accommodate the landing of fishing boats. Golofa Community Development Projects Ltd., which is in the process of being registered, is interested in investing in and developing the landing site, and has requested SPEED support to design and develop a project proposal.

Gomba Fishing Industries, Ltd., in Jinja, has held discussions with SPEED in connection with the establishment of a shoreline fish landing site at Wakawaka, also in Bugiri district, which can be linked with the island site at Lolwe. Upon establishment of the island site, Gomba Fishing Industries, Ltd. and other processors plan to facilitate the collectors with a supply of ice, working capital, and other inputs necessary for the transport of fish from Lolwe to Wakawaka. Thereafter, fish will be loaded into trucks and delivered to fish processing factories. SPEED staff met with the Chairman, Local Council and the Assistant Chief Administrative Officer of Bugiri, who confirmed the support of the district administration for this project.

Expected Results and Multiplier Effect

- Facilities for a large number of fishing boats in the area to deliver fish under improved landing conditions.
- Facilities for fish collectors and suppliers to collect quality fish.
- Increased supply of quality fish to fish processing factories.
- Additional direct and indirect employment,
- Increase of revenue to fishermen and fisher folk in the island.
- Trained management and support staff of a model landing site.
- Capacity of Fishermen's association strengthened and linked up with processors,
- Replicable model fish landing sites for remote islands managed by the fishermen and private sector processors.

Activities and tasks to design and develop a project proposal for the pilot remote island landing site.

The fishermen contacted are interested in developing a simple and easy to manage landing site. The work will be conducted in stages, and will take into consideration the immediate requirements, investment capacity of the stakeholders involved, and available additional sources of funding. In the first stage, the model site will be developed with the following minimum features:

- Floating pier or jetty;
- Fish weighing shed;
- Auction shed with washable surface table with water taps;
- Fish gutting slabs with water taps;
- Vermin proof fish store;
- Insulated ice storage facilities;
- Potable water; and
- Sanitary facilities etc.

The site may be further developed at a second stage with the following facilities:

- Boat building and repair workshop as well as an engine repair workshop;
- Fish processing facilities;
- Ice plant with ice store and chill room; and
- Additional facilities, as needed.

The development of the pilot fish landing site at Golofa will require the following:

Preparatory Requirements

- Hold discussions with the fishermen interested in the development of the pilot landing site at Golofa on Lolwe Island.

- Conduct discussions with the Gomba Fishing Industries, Ltd., who will establish the landing site at Wakawaka and liaise with Golofa to supply fish to processors.
- Identify the area on the island that is most appropriate for the landing site, in consultation with the partners.
- In consultation with the key beneficiaries, collectors, fishermen, and processors, define the ideal components of the landing sites at Golofa and Wakawaka, the basic facilities to be installed in stages and the requirements of the first stage of developing the landing site,
- Facilitate formal arrangements between the landowners or local authorities and investors/processors to develop the island landing site selected.
- Hold discussions with potential financing institutions to determine their requirements in the event investors in the project wish to seek financial support.

Technical Requirements

- Conduct consultations with the stakeholders in the area on the proposed pilot island fishing landing site.
- Determine the most appropriate scale of operations of proposed site in terms of maximum number of fishing boats, collectors boats that can be accommodated, maximum capacity of fish to handled per day, etc.
- Survey the area which is required for the landing site and obtain a land title in the names of the investors in accordance with prevailing laws.
- Make plans and drawings of all structures required for approval of the investor and government for landing site.
- Obtain quotations for civil works, plants, machinery, design, equipment, furniture, vehicles, and boats required for the implementation of the project.
- Determine quantities and the total capital costs of the project and the project implementation schedule.

Management Requirements

- Provide a management plan for the pilot island landing site.
- Provide details of the personnel required to manage and implement the day-to-day operations of the island site.
- Define the training requirements and provide a training module for all those who will work on the fish-landing site.
- Draft Scopes of Work (SOWs) for training requirements.

Financial Requirements

- Determine the total capital investment required for the project.
- In consultation with the potential investors and the other stakeholders, determine the possible sources of financing for the project.

- Provide a financial analysis of the project indicating total capital investment, projected operating costs, cash flow and balance sheet necessary for the facility to serve as a self-sustaining enterprise.
- Provide a sensitivity analysis of the project
- Determine the costs to be shared by different partners in project implementation.
- Draft the SOW to obtain offers for the construction of the site.
- Recommend evaluation criteria for selection of a suitable contractor.
- Prepare the text of the advertisement to employ an engineering consulting firm to supervise the required construction work.
- Identify the possible sources of funding for the installation of the landing site,

Environmental Requirements

- Conduct an assessment of the environmental impact of the project.
- In consultation with the National Environmental Management Authority, provide an accepted Environmental Impact Assessment report.

Assessment of Benefits

- Assess the benefits of the project to the fishing industry.
- Assess the benefits to key industry players and the local community.

Project Profile Brief

- Provide a project profile for possible investors.

Deliverables

A final project report, which will contain the following :

- A description of the proposed site and facilities provided;
- Details of key partners and their commitment to participate in the implementation of the project on a cost-sharing basis;
- Site plan and drawings for all structures;
- Bills of quantities for all structures on the project;
- Quotations for all items to be purchased for the project;
- Project implementation schedule;
- Management plan;
- Details of revenue sources on a monthly and annual basis;
- Financial analysis including capital investment, projected operating expenses, gross profit, cash flow, balance sheet, and sensitivity analysis, both with and without the project;
- Assessment of socio-economic benefits of the project;

- Clear working mechanism to link supplies between the island landing site and the shore landing site at Wakawaka.
- Documents related to RFPs, advertisement for the selection of a contractor, selection criteria for a consulting engineering firm to supervise construction; and
- Brief profile of the proposed pilot landing site to be used as promotional material to attract private investment.
- Recommendations for possible funding sources and next steps of implementation,

Consultants

The study is to be carried out by a team of consultants composed of the following individuals:

- Civil Engineer, with experience constructing lake and land structures;
- Fish Technologist, with experience in quality assurance in the fishing industry;
- Financial Analyst, with experience in project financial analysis;
- Socio-economist, with experience assessing the socio-economic benefits of projects; and
- Environmentalist, with experience assessing the environmental impacts of projects.

Duration

The consultants will be expected to finish the work in 35 days.

Schedule

The feasibility study will begin in December 2001.

20.Nov.2001

SPEED BDS Unit Fisheries Sector

Subject – Scope of Work for Consultancy on Implementation of ISO 9001:2000, HACCP and GMP for Selected Fish Processing Companies in the Fisheries Sector.

Background

The Support for Private Enterprise Expansion and Development (SPEED) Project mandate is to support the economic development of Uganda through the development and expansion of sustainable opportunities for micro, small and medium enterprises (MSMEs). This is to be achieved through implementing a series of activities focused on sectors, identifying market-linked opportunities for MSMEs and strengthening local capacity for Business Development Services (BDS) to provide services to MSMEs.

The guiding principle in the implementation of SPEED is the sector focus approach. Four major components are now being provided support viz coffee, cotton, dairy and fisheries. SPEED also works with sector intermediaries and associations to improve their capacities to serve their members better.

SPEED is implementing the fisheries sector program in collaboration with the USAID Competitive Private Trade an Expansion (COMPETE) project. SPEED now wants to prepare fish processing companies to obtain certification for ISO 9001-2000 in 2002/2003.

Rationale

In 1991 the European Commission(now the European Union) issued a Council Directive which requires third countries to adhere to health directives with regard to food regulations set for the European Union. Considering the European Union being the largest importer of Uganda fish products, every effort must be made to comply with the Directive of the European Union. All the same, if Uganda fish processing companies have to put their fish products on the world market, they must comply with the present international standards needed for implementation. These are ISO 9001:2000, Hazard Analysis Critical Points (HACCP) concept, Good

Manufacturing Practice (GMP) and Good Hygienic Practices (GHP) principles. The GMP and HACCP are prerequisites for implementation of ISO 9001:2000.

The country has now nine licensed fish processing companies operating. There are also two which are operating and one which is being renovated to carry out processing high valued fish products for export. The fish products are also being exported to the United States of America, Japan and the Middle East. The fish products being exported are the chilled and frozen fillets of Nile Perch and the Nile Tilapia.

Scope of Work for Certification of Fish Processing Factories Consultancy.

1. Conduct an awareness workshop on the scope, objectives and benefits of ISO 9001:2000 for the stakeholders.
2. Identify and select 4 to 6 fish processing companies willing to benefit from this consultancy.
3. Perform Quality Management System based on ISO 9001: 2000, HACCP and GMP diagnosis in 4 to 6 selected fish processing factories.
4. Determine the training needs and required assistance for the development and implementation of ISO 9001: 2000, HACCP and GMP in these selected companies . Certification of these companies to the above standards will be the main goal.
5. Prepare Training Manuals on the requirements of ISO 9001: 2000, HACCP and GMP.
6. Conduct implant training sessions for top middle management and assist in the elaboration of action plans for the implementation of the above standard and principles.
7. Assist selected fish processing companies in the development and implementation of ISO 9001: 2000, HACCP and GMP.

8. Train Quality Team Members in preparing documentation and in internal Quality Audits, train the workforce including at the floor and provide advice.
9. Present and discuss with the management of the selected companies a proposed programme of work to achieve certification including responsibilities and milestones.
10. Identify reputable international certification organisations and obtain quotations.
11. Select a reputable certification body in conjunction with the management of the participating company in agreement that they meet all the certification expenses.
12. Prepare reports of the missions undertaken.

Deliverables

Selected fish processing companies will have achieved readiness for certification for ISO 9001: 2000, and in addition to full implementation of HACCP and GMP.

Consultants

1. **Quality Assurance Specialist** - ISO 9000 QMS Expert should have 10 years of experience in QMS implementation and should be a QMS Auditor.
2. **Specialist in HACCP and GMP** should have at least 5 years experience in Food processing.

Duration

The Consultant(s) will be required to finish work within 20 weeks spread over one year. The justification being that ISO 9000 QMS needs at least one year for implementation and readiness for certification. Similarly, implementation of HACCP & GMP which are prerequisites of ISO 9000 QMS in Food processing industries will also need time for preparation and implementation.

Uganda's Fish industries will have implemented ISO 9001:2000, HACCP and GMP principles and will be ready for certification. The products manufactured in these processing industries will be competitive in the local, regional and international markets.

SPEED BDS Unit Fisheries Sector

Scope of Work for the Quality Assurance and Awareness and Awareness Training Consultancy

Background

The Support for Private Enterprise Expansion and Development (SPEED) project mandate is to support the economic growth of Uganda through the development and expansion of sustainable opportunities for micro, small and medium enterprises (MSME's). This is expected to be achieved through implementing a series of activities focused on particular sectors, identifying market - linked possibilities for MSME's and strengthening local capacity for Business Development Services (BDS) to provide services to MSME's. The major components that are being provided support are coffee, cotton, dairy and fisheries. SPEED also works with intermediaries and associations to improve their capacity to support their members.

SPEED is implementing the fisheries sector in collaboration with the USAID Competitive Private Trade Expansion (COMPETE) Project. SPEED is now intervening in the training of key personnel involved in the catching of fish, transporting fish on water to the main land fish landing sites; transporters of fish on road to the fish processing factories and those working in fish processing factories up to the finished product ready for inspection and required tests. These will also include managerial staff of individual fish processing companies who may not have been trained.

Rationale

SPEED intervention is to assist Uganda's fishing industry to have her fish processing industry attain international standards through compliance with the Hazard Analysis of Critical Control Points (HACCP) system. The approach to have key personnel at strategic levels for each processing company trained is to ensure fish quality assurance and awareness by all those involved along the fish supply chain. In this way Uganda fish exporters will have confidence on the fish products' world market.

Scope of Work

Technical Matters

- Prepare a training module for factory managers, factory employees, fish suppliers to fish processing factories, fishermen and fish retailers based on the Hazard Analysis of Critical Control Points (HACCP) system.
- In collaboration with fish processing factories management, get candidates for training in quality assurance and awareness from factories who are not trained, suppliers of fish to fish processing factories, fishermen who fish for factories, and fish retailers. Other candidates who are likely to benefit from the training will be selected in consultation with the Commissioner for Fisheries.

- Conduct a training course/s in quality assurance and awareness for the selected candidates according to the training module already prepared.
- Submit a report on the training courses.

Deliverables

- A module for training stake holders in quality assurance and awareness.
- A report on training course/s in quality assurance and awareness.

Consultant

Fish Technologist

A local consultant with at least ten years experience in quality assurance work is required.

Duration

The consultant will be required to finish the work in 45 days

BDS/SOW/Quality Assurance/E.K.

SPEED Project

Scope of work

STTA for a Feasibility study for a Pilot Commercial Fish Farming Project in Uganda

Background

The Support for Private Enterprise Expansion and Development (SPEED) Project mission is to provide support to the economic growth of Uganda through the development and expansion of sustainable business opportunities for micro, small and medium enterprises (MSMEs). This will be achieved through the implementation of a series of activities focused on selecting key sectors, identifying market-linked opportunities for MSMEs and strengthening local capacity to provide Business Development Services (BDS) to MSMEs.

One guiding principle in the implementation of SPEED is its approach. The project's four major components currently being supported are: fisheries, cotton coffee and dairy sectors. In addition, SPEED works with sector intermediaries and associations to improve their delivery capacities to support their members.

SPEED is implementing a fisheries sector and a fish farming sub sector support program in collaboration with the USAID Competitive Private Trade and Expansion (COMPETE) Project. SPEED plans to implement development of pilot commercial fish farms particularly to support export trade by supplying farmed fish to fish processing factories.

Fish farming sector in Uganda

Fish farming started in Uganda in 1953 on a subsistence level through the establishment of small-scale fish ponds and this sub sector is still at subsistence level. In 1965 the number of fish ponds reached 10,000; there has been a decline since then and it is estimated in 1996 there were about 6200 only covering an area of 124 hectares with a potential yield of about 124 tonnes for the year. The number of people owning these fish ponds are estimated at 4100. The species of fish which have been promoted for fish farming are the "Tilapine" species viz, *Oreochromis niloticus*, and *Tilapia zillii* and the exotic Mirror Carp (*Cyprinus carpio*) which has now become very popular among those who are doing fish farming. The catfish *Clarias gariepinus* has recently been added to the fish-farming program. In addition to these, there is also the exotic prawn *Procambarus clarkii* that has found Uganda conditions good for its growth.

The major constraints to the establishment of commercial fish farming are the high cost of pond construction. Currently the cost of constructing a one-hectare fishpond is in the region of Shs 14,000,000. Fry production is also low. There has not been demonstration of commercial fish farming in the country. The market has also been found to be very small in some parts of the country while the offer price is also not economic. This warrants investing in vehicles to carry the fish produced on a fish farm to better market elsewhere.

Rationale

The catches from the major lakes in Uganda have shown a significant increase during the past few years and they are being probably been stretched to their maximum limits. Rapid increase of exports of fish to international and sub regional markets from Lake Victoria and other water bodies in Uganda by Ugandans and some neighbouring countries have contributed to this situation. It is observed that unscrupulous fishing methods and practices including the use of small size gill net meshes would further destroy the stock available. Therefore, Uganda needs to encourage an alternative supply of fish to supplement what the country gets from the lakes for exports as well as for the domestic consumption. Under this situation, the most plausible alternative source of fish for Uganda would be through the development of a commercial aquaculture sector that could supplement the supply to exports as well as for the domestic market. However, it has been observed that fish from existing fish farms has a small market and the offer price is not economic. Therefore, SPEED's strategy to achieve a market-linked business enterprise in commercial fish farming in the country is to work with the fish processors who have an assured market as sponsors of model commercial fish farms with out-growers linkages. These model commercial fish farms can be replicated by other investors. When commercial fish farming takes root, it will take pressure off from the lakes, which are now taken to be the only source of fish.

It should be noted that when fish is cropped from a fish farm, it is graded to get the required size, say for the fish processor according to his specifications. The fish, which does not meet the required size can be sold to the public. So the people in the vicinity of the model commercial fish farm will benefit from the project.

The potential for commercial fish farming is great because of the good climate, ever-abundant water resource. Furthermore, the gentle sloping valleys make pond construction easy for pond aquaculture production system. Ingredients for the formulation of fish feeds are also locally available. Therefore, the development of a commercial fish farm sub sector in Uganda is a worthwhile venture. It also offers great potential. The SPEED project approach to support the development of this sector is to develop a support program to be implemented in stages. SPEED proposes first to support the establishment of a few model commercial farms linked to the exports with the existing fish processors or with commercial fish farm as pilot projects. This approach will permit SPEED to develop replicable models of market linked commercial fish farms in accordance with the existing laws of the country. To support this program the SPEED project intends to seek the assistance of local and foreign short-term technical consultancies.

About three possible investors are available to work with consultant in the field of commercial fish farming. They are in close contact with SPEED.

Scope of Work

Preliminary Requirements

- Discuss with the SPEED and COMPETE projects, Fish processors and existing commercial fish farms to identify prospective sponsors of model commercial fish farms with an assured market for fish farm products,
- Review the work carried out by the potential private sector partners so far and agree upon their commitment to implement the proposed model commercial fish farms,

Legal Requirements

- Conduct consultative discussions for communities in the area where a sponsor wishes to establish a model commercial fish farm to ensure acceptability of the project to the communities.
- Show evidence from government institutions like the Fisheries Department, National Environmental Management Authority etc that the project is within the laws of the country for the sponsor to carry out his investment.

Technical Requirements:

- In consultation with the sponsor individually, give the aquaculture production system which will meet the sponsor's objectives (whether earthen pond aquaculture production system, cage aquaculture production system, tank aquaculture production system etc).
- In consultation with the sponsor, provide the estimates of production of fish in tonnes per year as the sponsor's target.
- Depending on the production capacity required, provide the size of the fish farm and the investment required in land, water, pond construction or other fish rearing receptacles, hatchery/nursery, channelling of water to fish ponds or other fish rearing installations, pumping facility, buildings, laboratory, access road construction, service connections, vehicles, pond seine nets, dip nets, fish traps, maintenance tools, initial supply of feeds and fertilizers etc. Tanks, cages etc. This takes into account the selected aquaculture production system selected by the sponsor.
- Provide what has been agreed upon with the sponsor on the species to be farmed and the required market size of the fish.

- Provide the methodology to be employed to raise the fish agreed upon to the required market size and work out a way the annual production capacity requirement can be attained and sustained. This takes into account the species of fish currently on the fish farming program viz the “Tilapine” species of *Oreochromis niloticus* *Tilapia zilli*, the exotic Mirror Carp (*Cyprinus carpio*) and the Catfish *Clarias gariepinus*.
- Provide a way of removing the “muddy flavor’ taste characteristic of earthen pond fish and the financial implications should the sponsor opt for pond aquaculture production system.
- Review the fish production capacity available in the country and provide appropriate recommendations to improve it in orders to support the fish farming sector.
- Make specifications for technical assistance to supervise the construction and running the fish farm for at least one year to hand over a profitable turn-key project to the sponsor.

Management Requirements

- Provide man power requirements at all levels and management arrangements and work out an on-the-job training module for all categories of staff including managers.
- Provide a job description for each employee to work on the project

Financial Requirements.

- Work out the total investment of the project.
- Provide the total annual estimated sales of fish.
- In collaboration with the sponsor, work out the financing schedule showing the source of funds, i.e. loan, equity and/or other sources
- Provide a financial analysis, projected annual operating expenses for the project for ten years showing projected gross profit, projected cash flow, projected budget and profitability of the project. A loan repayment schedule should also be shown.
- Give a sensitivity analysis of the project.

Marketing requirements

- Show the marketing arrangements of the fish farm products taking into account the fact that in some cases fish from fish farms may have to be subjected to grading because of the special requirement with regard to size by customers like fish processors.
- Provide an out growers arrangement connected to the sponsor’s project as a model commercial fish farm and the economic way of running these fish farms. These outgrowers are expected to sell their fish to the commercial fish farming investor who will have an assured market.

Socio-economic Aspects

- Provide a socio-economic analysis of the project.
- Provide an Environmental Impact Assessment report of the project already accepted by the National Environmental Management Authority (NEMA) and an amended final report after discussion of a draft report with the stakeholders.

Provision for Options.

- Having carried out an assessment of commercial fish farming with some aquaculture production systems selected by the sponsors, provide a financial analysis of other aquaculture production systems fish farms comparable to those selected by the sponsors to give possible options for commercial fish farming in the country.

Deliverables

A draft consultancy report containing the following for each sponsor's model commercial fish farm that would be discussed with the private sector sponsors and other key stakeholders:

- Brief profile of the main private sector sponsors of the pilot projects
- Suitability of the project in accordance with the Uganda laws.
- A selection of an aquaculture production system by each individual sponsor.
- The target production capacity of the fish farm project.
- Methodology to be used for raising fish on the proposed fish farm.
- Recommendations for the removal of the "muddy flavor" taste from the pond fish raised on the fish farm and the financial implications if a pond aquaculture production system is to be employed.
- Estimated capital investment of the project to each sponsor,
- Marketable size of the fish to be raised on a fish farm in question
- The management organization of the project fish farm and an on-the-job training module as well as job description of all employees on the model commercial fish farm.
- Financing of the project and financial projections of the project for a ten years period.
- The sensitivity analysis of the project.
- Marketing arrangements for fish farm products.
- Socio-economic analysis of the project
- The out-growers arrangement to sell fish to the model commercial fish farm and the economic way of running these farms

- Options with regard to other aquaculture production systems in comparison with the one/s assessed
- Specifications for technical assistance personnel for one year.
- Environmental Impact Assessment report already accepted by the National Environmental Management Authority (NEMA).
- Final report incorporating the amendments suggestions by the stakeholders,

Consultants

International Fish Culturist (Team Leader)- 7 weeks

-With experience of at least ten years in warm water fish culture. Previous experience in fish culture in Africa will be an added advantage

The international consultant will work closely with the National Fisheries Consultant of the SPEED project

-National Aquaculture consultant recruited as a counterpart to work with the International consultant. The counterpart will benefit from the consultancy to build up local capacity in the field.

Civil Engineer

-With experience in aquaculture infrastructure construction for at least ten years.

-Financial Analyst

With experience of at least ten years in project financial analysis.

Duration

The consulting team will be required to finish the work in 7 weeks. It is envisaged that the financial analyst and the environmentalist will work for a short term consultancy as decided by the team leader.

Results

-There will be a model commercial fish farm/s, which can be replicated by other investors

STTA for Development of Locally Designed Inboard Diesel Engine Boats for Fishing and Fish Transport According to the Requirements of the Hazard Analysis of Critical Control Points (HACCP) System.

Background

The Support for Private Enterprise Expansion and Development (SPEED) project is a USAID project mandated to support the economic development of Uganda through the development and expansion of sustainable business enterprises for micro, small and medium enterprises (MSME's). It will achieve this through implementation of activities focused on key sectors and identifying market linked enterprises for the MSME's and strengthen local capacity to provide Business Development Services (BDS) to MSME's

SPEED through its focus approach is currently supporting four major sectors viz, coffee, cotton diary and fisheries. SPEED also works with intermediaries and associations to build their capacities to serve their members better. In doing all this, it collaborates with another USAID project called COMPETE.

SPEED in implementing activities in the fisheries, it has found it pertinent to support a design of inboard diesel engine boats for fishing and transportation of fish so that fishermen can save on costs of the fuel and also meet the requirements of international standards, namely, the Hazard Critical Control Points (HACCP) system.

Rationale

Boat building in Uganda has evolved from the production of dug-out canoe which measured up to 12 meters by 1.5 metres beam to the planked Ssesse canoe pointed at both ends. The planks of this boat were sewn together with palm fibres and reached 25 metres length over all (LOA). Such boats were used in wars. The fishing Ssesse boat was limited to 9 metres (LOA). This boat was cut at one end to facilitate fitting an outboard engine. This design is still in use today. Another boat, the "Nyanza" designed in early 1960's by one boat building company was a modification of the Ssesse canoe and it is still in use. Boats of European design with in board engines were imported in the 1950's; but these were expensive and they needed a dry dock for repairs. There were no dry docks in Uganda. The Uganda boats were beached for repair. The imported boats were therefore not popular. The "Kabalega" boat designed for Lake Albert is being used for fishing and transportation. The length over all (LOA) depends on the requirements of the customer.

The boats that have briefly been described above have been designed in collaboration with local experienced users hence their acceptability up to the present day. Newly developed inboard diesel engines boats will have to be client accepted if the idea of saving on the fuel costs of fishing or fish collection trips is to be pushed. This will mean greater earnings for the fisherman and his family. If the use diesel inboard engines can be accepted in the fishing industry there will be a saving on the national fuel bill.

The boat survey count carried out in the year 2000 showed that there were 15,544 fishing crafts used by 34889 fishermen and 910 transport crafts on Lake Victoria alone. There were 2031 out board engines. It can be taken that all the 910 transport boats used engines leaving 1121 for the fishing crafts. This definitely ends in quiet a substantial amount money especially foreign currency terms. Use of diesel engines will make a saving on the fisherman's pocket and on the national annual expenditure bill on fuel.

Tasks

- Study the boat building industry in Uganda including the evolution of various models and their suitability for fishing and transportation of fish.
- Find out how the present fishing and fish transport boats can be improved through redesigning and construction to meet the requirements of the Hazard Analysis of Critical Control Points (HACCP).
- Examine advantages of using materials other than timber for boat building e.g. ferrocement, fibreglass and using inboard diesel engines with after sales service.
- Make designs of open fishing and fish transport boats with inboard diesel engines paying particular attention to horse power and make and show the possible technical and economic advantages of such designs for their operation. Consideration should take into account the materials which can be used for building such boats and requirements of the HACCP system Make a decision on the most appropriate design which may be accepted by prospective users.
- Examine boat building concerns in the country and assess their competence to build such boats which have to meet HACCP system requirements.
- Design and build a prototype fishing boat and a fish transport boat in collaboration with prospective users already in the field of fishing and fish transportation. The boats will be built in a private boat yard with the supervision of an experienced boat builder as technical assistance personnel for a period of one year.
- Work out feasibility studies for building such prototype, for fishing and for transporting fish according to the HACCP system and carry out trial operations with these boats.

- Make a final report.

Deliverables

- A report on the boat building industry in Uganda
- A report on an introduction of a completely new design of a fishing boat and a fish transport boat meeting the HACCP system requirements.

- A report on the use of materials other than timber for building a fishing boat and a fish transport boat meeting the HACCP system requirements.
- A design of an inboard diesel open boat for fishing and for fish transport according to the requirements of the HACCP system.
- Recommendation of a private boat building concern to build the prototype boats which have been agreed upon.
- Prototypes of a fishing boat and a fish transport boat which meet the requirements of the HACCP system requirements.
- Feasibility studies for the prototype boats i.e. building an inboard diesel engine open fishing boat; building and inboard diesel engine fish transport open boat; the operation of the prototype fishing boat and the operation of the prototype fish transport open boat.
- A final report.

Consultants

Boat builder (Team Leader)

With experience of at least ten years in building open boats for fishing and transportation of fish according to HACCP system.

Economist

With experience of at least ten years in economic analysis of fishing enterprises.

Duration

The boat builder will work for a period of one year and he will make various designs which will be assessed with the economist and come out with a most desirable design for both prototypes and in collaboration with prospective experienced users. The selected designs will be built and the data compiled for analysis by the economist. The boat builder will conduct operation trials and compile data for the economist to analyse so that feasibility study reports can be made.

The economist will work for a period of three months making three missions of one month each over a period of one year. One month mission will be towards the end of the design. The second mission of one month towards the end of building of the prototype boats. While the third mission will be towards the end of the operation trials for the boats.

SPEED BDS Unit Fisheries Sector

Identification Of Scope Of Work Of Local And Regional Fish Markets (Rwanda, Congo, Kenya, Sudan etc)

Background

The Support for Private Enterprise Expansion and Development (SPEED) project a USAID project, is mandated to support the economic growth of Uganda through the development and expansion of opportunities for Micro Small and Medium Enterprises (MSME's) . This is to be achieved through implementing market-linked business opportunities for the MSME's. The project also supports strengthening local capacity strengthening for business development services (BDS) to provide services to MSME's.

The SPEED project guiding principle is the focus approach. It is currently supporting the coffee, cotton, diary and fisheries sectors. The project also supports sector intermediaries and associations to improve their capacity to serve their members in a more efficient ways.

In supporting the fisheries sector the SPEED Project in collaboration with another USAID Competitive Private Trade and Expansion (COMPETE) Project. SPEED now wants to identify local and regional fish markets in a distinct way. These include countries like Rwanda, the Democratic Republic of Congo, Sudan, Kenya etc.)

Rationale

Uganda's fishing industry is a source of fish for countries with which Uganda shares its borders. During the 1950's Uganda used to export fillets of Nile Tilapia (*Oreochromis niloticus*) to the present Zambia and Zimbabwe and Yemen. The fillets used to be produced by the Uganda Fish Marketing Corporation Ltd. (TUFMAC) which was based at Kasenyi fish Landing on Lake George in Western Uganda. The traditional export markets for the salted and sun dried fish from Lake Albert has always been the Democratic Republic of Congo and Sudan. While fish from Lake Edward and George has found market also in the Democratic Republic of Congo. Fish to these markets has been in dry smoked and salted and sun dried forms. Recently fish has begun being exported to Rwanda in fresh and cured forms. Tanzania and Kenya have received fish from Uganda in a hot smoked form.

Fish has been exported to the above countries through official and unofficial points. Figures for preferences of the countries in terms of species, form of processed fish products and unprocessed form are not known.

It is imperative that the magnitude of these markets is identified in figure terms in weight and value to find a way of improving the formal earnings of these

exports, and to find out whether other countries which once imported Uganda fish can resume to have Uganda fish exported to them. The study will reveal the fish exported earnings which can wholly and formally be obtained from these exports and measures which must be taken to achieve this.

It will be necessary to employ a local consultant to do this work and make recommendations.

Scope of work

Tasks

Preliminary Requirements

1. Review and report on the fish resource base of Uganda and make its production by weight as well as the projection for demand for fish in Uganda to the year 2015 from the nutrition point of view and from the economic stand point.
2. Review and report on the inter-district fish trade and make projections to the year 2015 by weight taking into account various fish species and fish products.
3. Review and make projections to the year 2015 and report for the urban and rural demand for commercial species and fish products in which they are marketed by weight annually and determine the per capita consumption of all fish in these areas. Distinguish also the per capita fish consumption by district.
4. Assess the effect of increased income in Uganda will have on regional fish export taking into account preferred species on the export market in the region.
5. Assess and report on the effect of credit in fish marketing locally and regionally .

Fish Export Market Information Requirements.

1. Study and report the legal and illegal export trends of fish in weight and value annually according to fish species and fish products to each country in the region which imports Uganda fish.
2. Study and report on fish consignee destination in the importing country (whether to a whole seller, distributor, retailer or consumer).
3. Study and report on the competitiveness of Uganda fish and fish products in each importing country in the region.
4. Study and report on foreign exchange earnings and would-be earnings of fish exported to each country in the region taking into account illegal exports.
5. Study and report on packaging of fish and fish products for export.

6. Make recommendations on desirable improvements for local and regional fish trade and measures for balancing national fish supply requirements and fish export trade as a whole.

Deliverables.

The final report will consist of :

- A projection of the Uganda fish resource base to the year 2015 and the supply and demand from the nutritional and economic stand point for Uganda.
- A report on inter-district fish trade
- A report on the demand for fish for urban and rural areas.
- The effect increased income on the regional fish trade.
- A report on the effect of credit in fish marketing locally and regionally.
- A report on legal and illegal fish export trade to countries in the region.
- A report on total volume and value of fish trade in the region.
- A report on consignees of Uganda fish in countries in the region.
- A report on competitiveness of fish and fish products.
- A report on foreign exchange earnings.
- A report on packaging of fish for export .
- Recommendations on desirable improvements on local and regional fish trade and the balancing of local and export fish requirements.

Consultant

A local consultant will be required to carry out the study.

Duration

The study should be finished in 90 days.

BDS/SOW/Local and regional fish market study E.K.

ANNEX 2- DRAFT MEMORANDA OF UNDERSTANDING

MEMORANDUM OF UNDERSTANDING

Support for Private Enterprise Expansion and Development (SPEED) Project

And

Uganda Fish Processors and Exporters Association

1-Introduction

This is a general Memorandum of Understanding (MOU) between the Uganda Fish Processors Association (UFPEA) and the Support for Private Enterprise Expansion and Development (SPEED) Project of the United States Agency for International Development (USAID) in Uganda through its Contractor, Chemonics International Inc. who shall be alternately be referred to as SPEED in this MOU. Both parties have agreed to enter into this MOU to reflect their mutual intention to cooperate and/or combine their resources and activities to ensure the efficient and viable implementation of activities that are consistent with the objectives of the two Parties. The terms and conditions herein appearing shall govern the roles, responsibilities, duties and obligations of the respective Parties under this MOU.

2-Background

SPEED is mandated to support the economic growth of Uganda and it is designed to meet the needs of microenterprises, small and medium size enterprises (SMEs). The project focuses on access to finance and business skills development. The project works with microenterprises, SME's, microfinance institutions (MFIs) and commercial banks to strengthen their capacities so that they can improve on their performances. It also works with business development services (BDS) providers to offer demand driven services that address the business needs of microenterprises and SMEs and institutional environment support. Finally, SPEED works in the policy arena to address constraints to microenterprises and SMEs development.

The Uganda Fish Processors and Exporters Association (UFPEA) established in 1993 brings together all the individual fish processing companies in Uganda. The objectives of the UFPEA are to promote the production of high quality fish products for export, to promote policies and measures for rational management of the fisheries resources of Lake Victoria, to promote fish handling and transport methods which preserve the quality, to promote the image of the fish products on the international market.

The Uganda Fish Processors and Exporters Association provides expert consultancy services to its members in quality assurance and in technical requirements for the plants and organizes workshops and training sessions on quality assurance and HACCP systems for their staff and fish handlers.

3-Term

This MOU shall come into force and effect from the date it is signed and shall continue for a period of existence of SPEED in Uganda.

4-Objective

At the end of the term of this MOU, the two Parties shall have implemented a number of activities. Each activity having been implemented under a separate specific MOU.

5-Scope of Activities

SPEED will have responsibilities and commitments as indicated hereunder.

- Assist to develop Scopes of Work in areas of technical assistance like the ones indicated below in which SPEED is already collaborating with UFPEA.
- Development of pilot fish landing site in remote islands.
- Assessment of fish post harvest losses on Lake Victoria.
- Website development strategy.
- Quality assurance
- Quality assurance and awareness training
- Jointly examine the possibility of obtaining resources (finance/technical assistance) for the implementation of activities agreed upon.
- Support in capacity building of the Association.
- Collaborate with the Association in any other area of mutual interest.

6-Specific Considerations

-UFPEA will meet all those responsibilities and commitments as they may be expressed under various specific MOUs and Scopes of Work agreed upon with SPEED.

7-Expenses

Unless otherwise mutually and explicitly provided and agreed upon, the two Parties (SPEED and UFPEA) agree to share expenses and costs related to an activity including a service provider on an agreed upon ratio. Pursuant to this MOU, each Party shall conclude separate contracts with consultants. SPEED's contract with a consultant shall become effective on the date of receipt of a signed contract between a consultant and UFPEA for the implementation of any Scope of Work for a consultancy.

8-Dispute Resolution

Any doubt or ambiguities, if any, in the interpretation of the provision of this MOU or any of its supplements, shall be resolved through mutual consultations and negotiations between the Parties.

9-Confidentiality

SPEED and UFPEA agree to maintain confidentiality with respect to details of this MOU. SPEED further agrees to maintain confidence all propriety information received from a client or consultant working on his behalf including consultant reports and financial information.

The Parties hereto set their hands this ----- day -----, Kampala, Uganda.

Chairman
Uganda Fish Processors and Exporters Association

Chief of Party
SPEED

MEMORANDUM OF UNDERSTANDING

Support for Private Enterprise Expansion and Development (SPEED) Project and

Lolwe Golofa Community Development Projects Limited Together with Gomba Fishing Industries Limited

This memorandum of Understanding (MOU) is between Lolwe Golofa Community Development Projects Limited together with Gomba Fishing Industries Limited and the Support for Private Enterprise Expansion and Development (SPEED) Project of the United States Agency for International Development (USAID) in Uganda through its Contractor, Chemonics International Inc. who shall be alternately referred to as SPEED in this MOU. Both parties have agreed to enter into this MOU to reflect their mutual intention to cooperate, coordinate and/or combine their resources and activities to ensure the efficient and viable implementation of the attached consultant's Scope of Work (SOW) that is consistent with the objectives of the SPEED Project. The terms and conditions herein appearing shall govern the roles, responsibilities, duties and obligations of the respective parties under this MOU.

1. Term

This MOU shall come into force and effect from the date it is signed and shall continue for a period of three (3) months unless otherwise sooner terminated by either Party in accordance with Clause No. 8.

2. Objective

At the end of the term of this MOU, the agreed upon consulting firm, ----- shall have prepared a bankable business plan for the construction of a fish landing site at Golofa Lolwe Community Development Limited and at Wakawaka in Bugiri District for Gomba Fishing Industries Limited (See attached SOW for details).

3. Responsibilities and commitments

Lolwe Golofa Community Development Projects Limited and Gomba Fishing Industries Limited will provide the consulting firm with any and all information considered essential by either the consulting firm or SPEED to the completion of the consultancy. Lolwe Golofa Community Development Projects Limited and Gomba Fishing Industries Limited will ensure the consulting firm has access to the fish landing site at Wakawaka in Bugiri District and provide logistical support to the extent required for successful completion of the assignment.

SPEED will assure Lolwe Golofa Community Development Projects Limited and Gomba Fishing Industries Limited complete access to any of the product emanating from the consultancy, and will offer technical consulting services from any SPEED full time staff

member. SPEED and Lolwe Golofa Community Development Projects Limited together with Gomba Fishing Industries Limited will monitor the progress of the consultancy.

Yusuf Karmali, Director, Gomba Fishing Industries Limited will be the guarantor for all financial obligations of Lolwe Golofa Community Development Projects Limited with regard to the implementation of the fish landing development at Golofa on Lolwe Island.

4. Expenses

Unless otherwise mutually and explicitly provided and agreed upon, the parties (SPEED and Lolwe Golofa Community Development Projects Limited together with Gomba Fishing Industries Limited) agree to share all expenses and costs related to this activity on a 50%:25%:25% (SPEED: Lolwe Golofa Community Development Projects Limited :Gomba Fishing Industries Limited) basis. Pursuant to this MOU, each party shall conclude separate contracts with the consulting firm. SPEED's contract with the consulting firm shall become effective on the date of receipt of a copy of a signed contract between the consulting firm with Lolwe Golofa Community Development Projects Limited together with Gomba Fishing Industries Limited separately for implementation of the attached SOW.

5. Other Future Activities

Any request for additional SPEED support deemed necessary for furtherance of Lolwe Golofa Community Development Projects Limited together with Gomba Fishing Industries Limited business objectives may be considered, and once approved, shall be covered by supplemental agreements.

6. Dispute Resolution

Any doubts or ambiguities or disputes, if any, in the interpretation of the provisions of this MOU or any of its supplements, shall be resolved through mutual consultations and negotiations between the Parties.

7. Confidentiality

SPEED and Lolwe Golofa Community Development Projects Limited together with Gomba Fishing Industries Limited agree to maintain confidentiality with respect to details of this MOU. SPEED further agrees to maintain in confidence all proprietary information received from the client or a consultant working on his behalf including consultant reports and financial information.

8. Termination

Either Party may terminate this MOU upon a 7 days prior written notice to the other. In such a case, SPEED reserves the right to withdraw its technical support and discontinue all financial support.

The parties hereto set their hands this ____ day of _____, Kampala, Uganda.

Lolwe Golofa Community Development Projects Ltd

Chief of Party
SPEED

Gomba Fishing Industries Limited

SOME PROPOSALS FOR SPEED FISHERIES SECTOR STRATEGY WORK PLAN 2002

BY

E.S.KANYIKE
NATIONAL FISHERIES CONSULTANT

TO

SUPPORT FOR PRIVATE ENTERPRISE EXPANSION AND DEVELOPMENT
SPEED

SPEED Fisheries Sector Strategy Work Plan 2002.

TABLE CONTENTS

	PAGE
Executive Summary	i
Introduction	1
1. Support for implementation of fish production, quality and value	1
1.1 Boat building design of inboard diesel engine boats for fishing and fish transport	1
1.2 Assessment and minimization of post harvest losses the Nile Perch <i>Lates niloticus</i> and the Nile Tilapia (<i>Oreochromis niloticus</i>) from the Uganda waters of lake Victoria along the fish supply chain	2
1.3 Support for artisanal fish processing	3
1.4 Support for participation in international exhibition by fish processing companies	4
1.5 Certification of fish processing and exporting companies	5
1.6 Training module and training in quality assurance and awareness for stakeholders	
1.7 Identification of local and regional fish market (Rwanda, Congo, Kenya, Sudan etc.)	8
2 Support for the improvement of the fisheries infrastructure development of mode fish landing site in remote islands (Lolwe island) Lake Victoria.	9
3 Increase business opportunities for micro small and medium enterprises (MSME's)	10
4 Facilitate access to finance	11
5 Strengthening sector intermediaries	12
6 Support for development of commercial fish farming	13
6.1 Support for pilot demonstration commercial fish farm	13
6.2 The culture of ornamental fish for export	14
6.3 Training module for courses for private fry producers and feasibility study for a private fry production centre	15
6.4 Training module and courses for commercial fish farmers	17
6.5 Support for a feasibility study for commercial trout farming	18
6.6 Support for a feasibility study on commercial farming of the crayfish (<i>Procambarus clarkii</i>)	19
6.7 Development of cage fish farming on edges of lakes and running water cage fish culture on rivers	20
7. Catch assessment survey	21
8. Fish catch per unit effort on Uganda lakes using gillnets	23
9. Support for sport fishing enterprises	24

Executive Summary

The SPEED fisheries sector strategy is being drawn up bearing in mind that the strategy addresses the private sector participation. It is in this vein that improvement of the fishing craft is receiving attention as a logical starting point. The improvement of the fishing craft in the strategy is geared to reducing the cost of operation of fishing and fish transport boats and to ensure adherence to Hazard Analysis of Critical Control Points (HACCP) system from the time of hauling the nets on the lake to the time the fish is loaded onto the factory vehicles taking fish to local markets. Inboard diesel engines in open boats are being considered.

The assessment of post harvest losses at different levels of the fish supply chain is an important exercise which will lead to measures required to be adopted to minimize the losses and bring the fish which would have otherwise been lost to full utilization.

Quality assurance and awareness training of all those connected with the supply and processing of fish is taken to be a prerequisite for international certification and participation in international fish exhibitions. These aspects have been given attention.

The improvement of facilities at fish landing sites is an important aspect of fisheries development process. This includes provision of fish handling facilities so as to ascertain supply of good quality fish for everybody. Further development in this line will take into account the improvement of the quality of life of the fishing communities at fish landing sites.

Increase of business will be directed towards the new businesses like actual fishing particularly for school leavers of working age; boat building and repair yards; establishment of outboard engine repair workshops; artisanal fish processing establishments; fish transportation; fish retailing equipment; establishment of ice plants, chill rooms and cold storage facilities linked to the fishing industry. From this access to financing will be undertaken.

The strengthening of the intermediaries is part and parcel of the development process of the fishing industry. The Uganda Fish Processors and Exporters Association as well as the Uganda Fisheries and Fish Conservation Association will need support as organizations which can ably articulate fisheries developmental problems. They need to document their requirements in capacity building to serve their members better; then an international consultant can see how their capacity building can be supported.

Commercial fish farming scope of work is available. Three investors who want to establish commercial fish farms need to visit commercial fish farmers in the United States of America as it has been suggested to understand what commercial fish farming looks like and return to set up commercial pilot demonstration fish farms which will be linked to out growers. The culture of ornamental fish for export is proposed. It should be supported. There are needs for courses for private fry producers and commercial fish farmers. These have

also been proposed in the work plan. The culture of high priced species like the Rainbow Trout and the Luisiana crayfish which are already in the country should be given support to be reared on commercial scale.

Farming the edges of lakes is being undertaken by COMPETE as an alternative aquaculture production system. SPEED can take on the farming of fish in running water on the Nile at Bbaale in Kayunga District Namasagali in Kamuli District and at Pakwach in Nebbi Distirct.

Catch assessment has been considered as an essential requirement for the establishment of business enterprises. A project write up is being undertaken which will be a basis for funding this activity.

Catch per unit effort has been recommended to be investigated as datum required in investment. While sport fishing has also been indicated as a foreign exchange earner.

SPEED Fisheries Sector Strategy Work Plan - 2002.

Introduction.

The Support for Private Enterprise Expansion and Development (SPEED) project mandate is to support the economic growth of Uganda through working with Micro, Small and Medium Enterprises (MSME's) and assisting them to access financial and development skills. The SPEED fisheries sector strategy work plan is therefore based on support for private sector development on the lines indicated below.

1. Support For Improvement Of Fish Production, Quality And Value.

1.1 Boat Building Design Of Inboard Diesel Engine Boats For Fishing And Fish Transport According To The Requirements Of The Hazard Analysis Of Critical Control Points (HACCP) System.

Background.

Most of the boats in the fishing industry in Uganda are not mechanized because of the high cost of petrol used to operate outboard engines. Hence only a few boats exploit the distant waters of say Lake Victoria and Lake Albert. For example, according to the survey carried out on Lake Victoria in the year 2000 by the Lake Victoria Environmental Management Project and the Lake Victoria Fisheries Research Project, there were 2031 boats with outboard engines out of 16,454 fishing and the transport boats. This is 12.3%. If it is assumed that the 910 transport boats which were found on the lake all used outboard engines then the fishing boats used 1121 outboard engines which is 7.2%. This means that the distant waters of the lake are not fully exploited.

Rationale

Experience has shown that locally designed boats as a modification of existing types stand a good chance of being adopted and used in the fishing industry. The introduction of inboard diesel engine open boats will save on fishing and transport operations and at the same time transfer the technology of building such boats to Ugandans. There are at present 221 boat building and repair facilities on Lake Victoria. These can engage in the building of newly introduced boats which may be on demand because of their low operation costs. The earnings from fishing and fish transport operations will increase and hence the quality of life of the fishing communities.

Expected Inputs

- Consultancy in boat building
- Feasibility studies on building inboard diesel engine open fishing and fish transport boats meeting HACCP system requirements.
- Feasibility study report on operation of the fishing and fish transport boats
- Advertising for the new model boats.

Expected Outputs

- Economically usable boats
- Increased exploitation of distant waters of large lakes
- Increased earning from fishing and fish transport operations
- Transfer of technology in boat building.

Beneficiaries.

- Fishermen and fish transporters who will earn more
- Fish processors and the local market fish retailers will have more fish because of increased exploitation of distant waters of large lakes.

Consultants.

- Boat builder experienced in building open boats for at least ten years
- Economist experienced in analysis of fishing enterprises projects

Duration

A boat building consultant will be engaged for one year to design the boats. He will be joined by an economist for a total of 3 months divided into two missions to carry out feasibility studies.

Assumption

It is assumed funds will be available to carry out the design.

1.2 Assessment And Minimization Of Post Harvest Losses Of The Nile Perch (*Lates Niloticus*) And The Nile Tilapia (*Oreochromis Niloticus*) From The Uganda Waters Of Lake Victoria Along The Fish Supply Chain.**Background.**

There are post harvest losses which occur along the fish supply chain in Uganda's fishing industry but the magnitude of the losses are not known. A figure of 20-30% of the national catch has been suggested. It is necessary to know how much is lost at various levels and the causes of these losses. It is necessary to minimize these losses for the maximum benefit of all those involved in various activities along the fish supply chain.

Rationale

It is undesirable that fish of the right size can be caught but it is then lost along the supply chain. It is imperative that the exact amount of fish lost along the various levels of the fish supply chain is known and measures taken to minimize them. This will increase the amount of fish supplied to fish processing factories and to the local market.

Expected Inputs.

- A consulting firm to assess the fish post harvest; detailing the causes and write a project for the minimization of the losses found.

Expected Outputs

- An annual figure of post harvest losses of the Nile Perch (*Lates niloticus*) and the Nile Tilapia (*Oreochromis niloticus*) from Lake Victoria.
- A project to minimize the post harvest losses of the above species.

Beneficiaries

- Fish processors and exporting companies will receive more fish as raw materials.
- Fish suppliers will supply more fish to the factories and to the local market and therefore earn more.
- The country will earn more foreign exchange.

Consultants

- A fish technologist with experience of at least ten years
- A statistician experienced in survey methods

Duration.

- A consulting firm with the above expertise will be engaged for a total of three months within a period of six months to catch two seasons of a year to carry out a post harvest losses survey for Nile Perch (*Lates niloticus*) and the Nile Tilapia (*Oreochromis niloticus*) and write a project for the minimization of these losses.

Assumption

It is hoped money will be available to execute the project

1.3 Support For Artisanal Fish Processing.**Background.**

Traditional fish processing methods include hot smoking, salting and sun drying, only sun drying and deep frying. Fish in these forms is marketed in Uganda and in neighbouring countries. These methods have provided employment to many people. Hygienic improvement of the methods is required.

Rationale

Facilities like fish smoking kilns, salting vats, drying racks portable water to wash fish to improve the quality of fish products will be required as an

investment as a private business. Private individuals like women and school leavers who have found employment in this line should be assisted in a way of a business plans and access to loans.

Expected Inputs

- Consultancy for “typical” feasibility studies
- Assistance to access finance
- Loan repayment follow-up

Expected Output

- Good quality fish products for domestic and export market
- Increased employment

Beneficiaries

- Consumers will have good products on the market
- Artisanal fish processors will have a better price for their fish products

Consultants

- Fish technologist with at least ten years of experience
- An economist with at least ten years experience in financial analysis of fisheries enterprises

Duration

- The consultant will be expected to finish the work in 45 days.

Assumptions

It is assumed that there will be people to engage in improved hygienic artisanal fish processing

1.4 Support For Participation In International Exhibitions By Fish Processing Companies.

Background.

Fish products from Uganda are not well known on the International market. Fish fillets of mainly Nile Perch (*Lates niloticus*) are exported in 6kg packets and they are re packed by dealers in importing countries. Uganda fish products should be projected abroad and participation in international exhibitions is vital.

Rationale

The fish processing industry needs to be assisted to get higher prices for their fish products. The image of the fish products from Uganda's fish processing companies needs to be projected through the participation of the companies in international exhibitions.

Expected Input.

- International consultants to prepare intending companies to participate in international exhibitions
- Cost sharing for participation.

Expected Output

- Increased prices of fish products
- Report from exhibition

Beneficiaries

- Fish processing companies will have higher prices for their fish products.
- The country will earn more foreign exchange

Consultants

- An international consultant in fish marketing will be required to prepare fish processing companies for participation in international exhibitions.

Duration

An international consultant to prepare the intending companies to participate in international exhibitions will be employed for a period of one month divided into appropriate missions.

Assumptions

- It is assumed that fish processing companies with ISO 9000:2001 certification will be interested participating in international exhibitions.
- It is also assumed that finance will be available for participation.

1.5 Certification Of Fish Processing And Exporting Companies**Background.**

International standards have been set up for the protection of the user of end products of manufactured goods and to build confidence in the manufacturer with regard to products put on the international market. ISO 9000 standards have been set up for this purpose. Fish processing and exporting companies

need to be awarded ISO 9000:2001 to confidently put their fish products on the market.

Rationale

SPEED is supporting market-linked enterprises and the fish processing and marketing companies are in line with the objectives of the project. The fish processing and exporting companies should be supported to obtain certification of ISO 9000:2001.

Expected Input.

- The intending fish processing and exporting companies which are interested in ISO 9000:2001 certification will need a consultant to prepare them for the award.
- A reputable recognized company will be invited for the award of ISO 9000:2001 certification.

Expected Output.

- Intending fish processing and exporting companies will receive ISO 9000:2001 certification.
- Fish products of companies with certification will have a better image on the international market.

Beneficiaries

The fish processing and exporting companies will benefit from a wider international market.

Consultant

- Consultant with experience in ISO 9000:2001 will be employed to prepare the companies for certification.

Duration.

The Consultant will be required to work within twenty weeks spread over one year.

Assumptions

- It is assumed that the fish processing and exporting companies will be interested in the certification.
- Finance will be available to engage a consultant to prepare the interested companies.
- Finance will be available from companies to pay for the certification.

1.6 Training Module And Training In Quality Assurance And Awareness For Stakeholders.

Background.

International quality standards require everybody involved in the manufacture of a product to be aware of the required international quality standards.

In the field of fisheries, fishermen, fish handlers, fish collectors and suppliers have to know the requirements of quality standards at their level. It is necessary to prepare a training module and conduct quality assurance and awareness courses for all stakeholders.

Rationale

SPEED is supporting the fish processing and exporting companies in various aspects including international quality control requirement. It is imperative that stakeholders along the fish supply chain are trained in fish quality assurance and awareness.

Expected Inputs

- A consultant to prepare a training module in quality assurance and awareness for stakeholders and to organize courses for stakeholders.

Expected Outputs.

- Fishermen, fish handlers, fish collectors and fish suppliers to fish processing factories will be trained in quality assurance and awareness.

Beneficiaries

- The fish processing and exporting companies will receive quality fish as raw materials
- Fish suppliers and all those along the fish supply chain to the fish processing factory will get a good price.

Consultant

Fish technologist with at least ten years experience in quality assurance

Duration

The consultant will be required to finish the work in 45 days

Assumptions

- It is assumed that funds will be available to engage a consultant to provide a training module, organize and conduct courses for stakeholders.
- Fish processing and exporting companies will cooperate and identify their fish suppliers for training.

1.7 Identification Of Local And Regional Fish Market (Rwanda, Congo, Kenya, Sudan Etc.)

Background

Uganda has shared the fish products of her fisheries resources with her neighbours. These include Rwanda, the Democratic Republic of Congo, Sudan, Kenya, Tanzania. Fish products have been exported as far as the present Zambia and Zimbabwe and as far as Yemen. Fish products trade with the above countries has been through legal and illegal channels. It is necessary to streamline the channels of fish trade with the neighbouring countries.

Rationale

SPEED wants to support the private sector expansion in the field of fisheries. It is necessary to obtain information with regard to the volume of fish trade that exists and the way it is conducted. It is therefore intended to engage a local consultant to carry out a fish marketing study for local and regional fish trade and provide recommendation for increasing and streamlining it.

Expected Inputs.

- Preparation of a scope of work for a consultant to carry out a fish and fish products trade locally and regionally and make recommendations

Expected Outputs

A study report which will have the following;

- Fisheries resource base requirements projected to the year 2015.
- A report on the local fish trade together with the demand and supply.
- A report on legal and illegal fish trade with neighbouring countries.
- A report on total volume of fish trade with Uganda's neighbouring.
- The competitiveness of Uganda fish products on region fish market.
- A report of foreign exchange earnings from fish trade regional market.
- Recommendation improvement of regional fish trade and balancing local fish requirements and regional fish market.

Beneficiaries

- The fish exporters to regional fish markets will get a clear picture of their activity.
- The country will know the improvements required in the fish regionally.

Consultant

- A local fish marketing consultant will be engaged to carry out the study.

Duration

The consultant will be required to finish the work in 90 days

2. Support For The Improvement Of The Fisheries Infrastructure Development Of Model Fish Landing Site In Remote Islands (Lolwe Island) Lake Victoria.

Background.

Fish landings on the islands of Lake Victoria have no facilities which would attract people to remain at a landing site permanently so that other businesses can thrive. The situation has led to the migratory nature of fishermen. The development of a fish landing site with a willing private person who may own land on an island is a reasonable approach. Such a fish landing development plan can be replicated by other entrepreneurs. Lolwe Island has a group of fishermen owning 400 fishing boats, have formed themselves into a company known as “Lolwe Golofa Community Development Projects Ltd.” These fishermen together with a fish processing company namely “ Gomba Fishing Industries Ltd.” want to develop a fish landing site at Golofa on Lolwe Island in Bugiri District as a self sustaining enterprise. The fish landing site at Golofa has a population of 15,000 people.

Rationale

The provision of facilities at Golofa on Lolwe island will lead to better handling of fish. Facilities will include a floating pier or a jetty, water supply, an insulated ice store, etc. as a first phase. The second phase will include facilities which will be decided upon.

Expected Inputs

- Engagement of a consultant to provide a bankable feasibility study.
- Finance for the construction of the fish landing site.
- Training of a management team
- Training of fishermen in good fish handling practices.

Expected Outputs

- There will be an infrastructure established.
- A trained management team for the management of the landing site.
- Training provided to the fishermen.
- A set of drawings which can be used for replication of the landing site by other investors.

Beneficiaries

- Fishermen who form a company will have set up a business for themselves and ancillary businesses for the others in the community on the island will come up.
- Fish processors will get good quality fish for processing.

Consultant

- A consulting firm will provide expertise in engineering work, fish technology, environment impact assessment and financial analysis for a feasibility study.

Duration

- The feasibility study will take 45 days.

Assumption

- It is assumed that money will be found to finance a feasibility study which will lead to construction of the fish landing site.

3. Increase Business Opportunities For Micro, Small And Medium Enterprises (MSME's)**Background**

Uganda's fishing industry like others in the world has a multiplier effect. People find employment in businesses connected with fisheries. These include actual fishing, boat building and repair, fishing gear manufacturing, fish transportation, fish processing, outboard engine repair, fish marketing etc. Women and school leavers as well as other people have found employment in various activities connected with the fishing industry. More people will find employment in various activities if assisted.

Rationale

SPEED mandate is to assist Micro, Small and Medium Enterprises (MSME's). People, especially women and school leavers can be assisted to carry out business in the various activities connected with the fishing industry through preparation of feasibility studies and accessing finances.

Assistance can be in the following areas among others.

- Establishment of new fishing enterprises,
- Establishment of boat building enterprises
- Support for private acquisition of insulated fish transport boats, pick-up and vans, refrigerated trucks and insulated boxes.
- Support for establishment of ice plants.
- Support for putting up vermin proof fish store for cured fish.
- Support for fish retail facilities.
- Support for fish packaging equipment and materials

Expected Inputs

- Engagement of a consultant to write “typical” feasibility studies for the businesses above.
- Assistance to access financing.

Expected Outputs

- More people will be employed

Beneficiaries

- The general populace will find employment.

Consultant

- A consulting firm with expertise in fisheries and financial analysis will be required.

Duration

- A consulting firm will be expected to finish writing “typical” feasibility studies in 60 days.

Assumptions

It is assumed that finance will be available to employ a consulting firm to write “typical” feasibility studies.

4. Facilitate Access To Finance**Background**

Inability to access finance is a major draw back to many people who would have established business in this country. Interest rate is another problem. This goes up to 20% per annum. If these can be overcome then micro small medium enterprises (MSME's) will be established. This is therefore tied with the increase of business opportunities in the field of fisheries.

Rationale

SPEED will assist greatly the economic growth of Uganda if accessing finance is made easier in the private sector for MSME's.

Expected Inputs.

- Preparation of scope of work for consultants to carry out feasibility studies for SPEED clients.
- Recruitment of service providers with the client to carry out a feasibility studies.

Expected Outputs

- Bankable feasibility studies documents.
- Introduction of financing institutions known to SPEED to beneficiaries identified by SPEED.

Beneficiaries

- New entrepreneurs who could not access finance on their own will benefit.

Consultant

- Consultant experienced in preparation of business plans will be asked to submit their proposals to write business for SPEED clients.

Duration

- The time required for each feasibility study will be judged on its own merit.

Assumption

It is hoped that the interest rate will not be prohibitive.

5. Strengthening Sector Intermediaries.**Background**

There are sector intermediaries in Uganda's fishing industry. These include the Uganda Fish Processors and Exporters Association (UFPEA) the Uganda Fisheries and Fish Conservation Association (UFFCA). There is also in the districts the Uganda Fish Farmers Association which has not clearly come to the national level . These need strengthening. Already UFPEA and UFFCA are working with SPEED in the field of website development strategy. UFFCA will need capacity building to serve its members better and to enable it to carry out professional assignments in the field of fisheries.

Rationale

Intermediaries like UFPEA and UFFCA play an important role in articulating problems connected with the fishing industry as non government organizations. Their strengthening is essential for the development of the fishing industry in a stakeholders participatory manner.

Expected Inputs

- The website development strategy consultancy for UFPEA and UFFCA is already in place.

- UFFCA will need capacity building and a consultant will be required.

Expected Outputs

- Website facilities provided.
- UFFCA requirements in capacity building will be reported.

Beneficiaries

- The members of UFPEA and UFFCA will benefit.

Consultant

- An international consultant for website development strategy has been provided.
- An international consultant for the strengthening of UFFCA is required

Duration

- An international consultant to advise on the strengthening of UFFCA will be required to do the work in 30 days

Assumption

- It is assumed that finance will be available for the capacity building of UFFCA.

6. Support For Development Of Commercial Fish Farming.

6.1 Support For Pilot Demonstration Commercial Fish Farms.

Background

Fish farming in Uganda has been on subsistence level since its introduction in the early 1950's. Considering the fact that natural lakes have maximum sustainable yields, yet Uganda's population is increasing, it is imperative that commercial fish farming is developed to meet the country's fish supply requirements in future. This has been recommended in the Uganda Fisheries Master Plan.

Rationale

Uganda has a very high potential for fish farming. Commercial fish farming can be linked to the present fish processing industry which has an export market. Pilot fish farms will provide opportunities for other investors to replicate them. Pilot fish farms will be linked to out growers to be assured of a ready market, since the pilot fish farms will be linked to fish processing plants which have a

ready market . Intending investors in pilot fish farms will benefit from visiting commercial fish farmers in other countries.

Expected Inputs

- Visit by intending commercial fish farmers to other commercial fish farmers in another country
- Bankable feasibility studies for pilot commercial fish farms .
- Construction of a pilot demonstration commercial fish farms with a private entrepreneurs.

Expected Outputs

- A pilot demonstration commercial fish farms which can be replicated.
- Bankable feasibility studies which can be modified by other investors.

Beneficiaries

- Intending commercial fish farmers will have a demonstration fish farm to learn from.
- Investors will earn profits from the established farm.

Consultant

- A consulting firm with expertise in aquaculture, civil engineering and financial analysis will be required

Duration

- Selected intending commercial fish farmers will visit commercial fish farmers in another country for a period to be determined.
- A consultant will be engaged to work out feasibility studies for identified intending fish farmers taking 60 days.

Assumptions

- It is assumed finance will be available to implement the project.

6.2 The Culture Of Ornamental Fish For Export.

Background

There are a number of beautifully coloured species of fish in Uganda waters, and if cultured, can be exported to earn the country foreign exchange. Such species include members of the “Haplochromines” cichids.

Rationale

SPEED is mandated to support Micro, Small and Medium Enterprises (MSME's). The culture of ornamental fish can develop into a big business and will earn foreign exchange for the country. SPEED can initiate work on this project in collaboration with the National Agricultural Research Organization (NARO).

Expected Inputs

- Recruitment of a fish culturist.
- Identification of ornamental fish markets.
- Identification and collection of beautifully coloured species.
- Breeding trials for ornamental species.
- Identification of investors to go into the culture of ornamental fish species.

Expected Output

- Increase of income of fish farmers dealing in ornamental fish culture.
- Creation of employment.

Beneficiaries

Fish farmers engaged in the culture of ornamental fish will improve on their income. People who will work with the fish farmer will get employment.

Consultant

- A local aquaculturist with at least 10 years experience will be required.

Duration.

- The aquaculturist will be employed for a period of 6 months initially with a view of finding suitable private investors to take over the project.

Assumptions.

- It is assumed that clients for this business will come up and that funds will be available for this activity.

6.3 Training Module For Courses For Private Fry Producers And Feasibility Study For A Private Fry Production Centre.**Background.**

The supply of fry to fish farmers has been the responsibility of government since the introduction of fish farming in the country. Experience has shown that as the number of fish farmers increased the government could not meet

the requirements of fish farmers and this has worked against the development of fish farming. It is now imperative that the technology of producing fry is passed on to fish farmers and establish a fish farmer to fish farmer extension service in a way of supply of fry.

Rationale

The development of commercial fish farming will need prompt supply of seed especially for fish farmers who have firm orders for the supply of fish to fish supplying factories, institutions etc. The support of bringing up private fish farmers in fry production business will transfer technology to fish farmers and it will generate employment for the people.

Expected Inputs.

- Recruitment of a fish culture consultant
- Determination of location of a private fry producers.
- Identification of fish farmers who can be trained and have the minimum requirements for private fry production.
- Organization of training course/s
- Selection of breed stocks and sale to trained private fry producers.
- Initial supervision of fry production on fish farmers farms.
- Production of a “typical” bankable feasibility study for a private production centre.
- Assistance to access financing.

Expected Outputs.

- Readily available fry for stocking fish farmers fish ponds.
- Employment to people in the vicinity of the private fry producer.
- Increase in fish production from fish farms.
- A “typical” bankable feasibility study for a private fry production centre.

Beneficiaries

- The fish farmers will have readily available fry to stock their fish ponds.
- The communities in vicinity fish farmers will be able to purchase fresh fish.
- The communities will have jobs on fish farms.

Consultant

- An aquaculturist with experience of at least ten years will be required

Duration

- An aquaculture consultant will be recruited for a period of one year for the project.

Assumptions.

It is hoped funds will be available to enable the project to be implemented.

6.4 Training Module And Courses For Commercial Fish Farmers.

Background.

Commercial fish farming as an enterprise needs good training in the technical understanding of fish farming and fish farming business management techniques of a commercial fish farm. Intending commercial fish farmers will need to undergo a course currently being organized by SPEED, Makerere University, National Agricultural Research Organization (NARO) and MS Sun Fish Farm Ltd.

Rationale

The development of commercial fish farming in Uganda is absolutely necessary if the future fish supply needs for the people are to be met. It is fitting that commercial fish farmers are trained at Makerere University where an appropriate course will be organized on the practical aspects of running a commercial fish farm.

Expected Inputs.

- Planning of the course module.
- Identification of teachers.
- Logistics arrangements.
- Determination of costs for the course.
- Determination of fees for the participants.
- Determination of cost sharing of expenses
(SPEED: Makerere: NARO: Sun Fish Farm Ltd.)

Expected Outputs.

- Knowledgeable commercial fish farmers.

Beneficiaries.

Intending commercial fish farmers will be able to go back with a clear mission for their own activity on their fish farms.

Consultants

- At least 3 resource persons with experience with aquaculture will be required.
- One resource person with farm management experience will be required.

Duration

- A team of experts is already working on the syllabus for the training in collaboration with Makerere University, National Agricultural Research Organization and Sunfish Fish Farm Ltd. The experts to train will work as

and when the course is conducted. The number of courses to be held per year will be determined with the finalization of the syllabus

Assumptions

It is hoped all those involved in the promotion of commercial fish will assist the training.

6.5 Support For A Feasibility Study For Commercial Trout Farming.

Background

The River Bukwa and River Sipi on Mt. Elgon as well as Mobuku River on Mt. Rwenzori have been stocked with Rainbow Trout. Sport fishermen have been given licenses to fish on these rivers on Mt. Elgon while sport fishermen have been given permits to fish on Mobuku River on Mt. Rwenzori and provide statistics on the fish they catch. The culture of Rainbow Trout is known all over the World. It is only a question of technology transfer to carry out commercial trout farming on Mt. Elgon and Mt. Rwenzori which is required.

Rationale

SPEED is interested in high value fish species for commercial fish farming. Rainbow Trout is a high value species which is already in the country and has found the waters of the rivers of Mt. Elgon and Mt. Rwenzori conducive for its growth. An expert in trout culture would do well in carrying out a feasibility study for commercial trout farming in Uganda.

Expected Input.

- An expert in trout culture needs to be engaged on this work for period of one year and produce a feasibility study for trout culture and set up a demonstration trout commercial fish farm on either Mt. Rwenzori or Mt. Elgon.

Expected Output.

- A feasibility study report will clear the way for commercial Rainbow Trout culture in the country.

Beneficiaries

- Once a bankable feasibility study is made available it can be used by people on Mt. Elgon and Mt. Rwenzori to rear this high priced fish which can also be exported.

Consultant

- An aquaculturist experienced in commercial trout farming will be required.
- A civil engineer experienced in construction of trout commercial fish farm installations will be required.

Duration

- A trout culture consultant will be recruited for a period of one year together with a civil engineer to work out the feasibility study . The civil engineer will join the trout culture consultant for 3 months over a period of one year for the feasibility study and making plans for trout farming installations.

Assumptions.

- It is hoped funds will be made available to carry out the feasibility study.

6.6 Support For A Feasibility Study On Commercial Farming Of The Crayfish (*Procambarus clarkii*).**Background.**

The Luisiana Crayfish (*Procambarus clarkii*) was introduced in Uganda in the early 1960's and it has established itself at Kajjansi Aquaculture and Development Centre and South Western Uganda. Those who have eaten it have found it tasty and its price is now shs. 5,000/= unshelled.

Rationale

SPEED is looking for high priced species for fish farming. The Crayfish (*Procambarus clarkii*) has already a good market in Uganda. A feasibility study for this crayfish will open good opportunities to earn money by farming it on commercial lines.

Expected Inputs.

- A consultant on this crayfish preferably from the United States of America will assist in providing a feasibility study for the crayfish (*Procambarus clarkii*) commercial farming.

Expected Outputs.

- The culture of the crayfish will increase the income of fish farmers.

Beneficiaries

- Fish farmers who will take up crayfish farming will benefit.
- Increase in employment for people in the vicinity.

Consultant

- An aquaculturist with experience in commercial crayfish farming will be required.

Duration

- A consultant will be engaged to carryout a feasibility study for a period of 45 days.

Assumptions

- It is hoped money will be made available to engage a consultant for this study.

6.7 Development Of Cage fish Farming On Edges Of Lakes; Running Water Cage Fish Culture On Rivers.**Background**

The earthen pond culture production system is the most common method of aquaculture production method in Uganda. The development of cage culture for the fish farming on the edges of lakes is another method which can be carried out. COMPETE Project is working on this. The use of fish boxes to culture fish in the running waters of rivers in places like Namasagali in Kamuli District, Bbaale in Mukono District on the Nile and Pakwach in Nebbi District also on the Nile will be another way of utilization of facilities available in the country for fish farming. Fish pens can also be used in the shallow waters of lakes for fish farming. The feasibility of these methods needs to be carried out.

Rationale

The use of alternative aquaculture production systems is one way in which SPEED can support to increase fish production in the country and create wealth for the citizens. This will assist the economic growth of Uganda .

Expected Inputs

- An aquaculturist experienced in culture of fish in running waters and pens in shallow waters of lakes will be employed to carry out feasibility studies for aquaculture feasibility studies indicated above.

Expected Outputs

- Feasibility studies for use by investors in new fish culture production systems
- There will be increased production of fish

- Increased employed of people in the vicinity

Beneficiaries

- People engaged in aquaculture methods described above will increase their incomes.
- People in the vicinity of these establishments will obtain more fish on the market.

Consultant

- An aquaculturist with experience in running water aquaculture production system and the use of fish pens in shallow waters of lakes will be employed together with the financial analyst.

Duration.

- An aquaculturist and financial analyst will be employed for a period of 45 days to carry out a feasibility study.

Assumptions

- It is hoped that financial support will be given to carry out the feasibility studies indicated above.

7.Catch Assessment Survey**Background**

The fish catch assessment is an important element for the planning economic activities with regard to the development of a fishing industry. There are logistic problems encountered in the field which make it difficult to collect catch statistics from the numerous fish landing sites on the shores of Uganda lakes where commercial fishing is undertaken. The annual catch estimates therefore are not very accurate hence the need to employ methods which can provide a more reliable annual catch figure .

Rationale

SPEED is supporting the economic development of Uganda in the field of fisheries. It is imperative that fisheries statistics with certain degree of accuracy are obtained to arrive at reasonable decisions. It is for this reason that a fish catch assessment from Uganda is obtained using survey methods which will give reasonably accurate data for use for various activities.

It is intended to use an aerial survey method to count all boats operating on various bodies of water. There will also be a ground survey of catches on all bodies of water noting the type of fishing gear in use, the number of days fished in a week, the species of fish caught by each gear by weight and value etc.

Expected Inputs

- Employment of a firm to carry out the catch assessment
- Preparation of scope of work for a company to carry out the catch assessment.

Expected Outputs

- Accurate annual catch data for all bodies of water by species and landing in various areas.
- Number of fishing boats on all water bodies
- Number of fishermen on each body of water
- Number and types of fishing gears used on each body of water.
- Number of mechanised un-mechanised fishing boats on each body of water
- Average number of days fished per week
- Weight and value of catch of each body of water
- Average number of fishing gear by type of gear per boat.

Beneficiaries

- The statistics obtained will assist SPEED in its planning for support of private fisheries activities of its clients.
- Planners in central government and at district level will have accurate data for planning purposes.

Consultants

A firm to carry out the catch assessment will have the following.

- Fisheries expert with at least ten years experience
- A statistician with experience in survey methods
- Enumerators with knowledge of fishing, fishing gear, fish species etc.

Duration

- The consultant will carryout the work in three months within a period of six months to catch variation for seasons and within seasons.

Assumption

It is assumed funds will be obtained for this project.

8. Fish Catch Per Unit Effort On Uganda Lakes Using Gillnets

Background

Commercial fishing is being undertaken on many Uganda lakes but catch per fishing gear type is not known for all bodies of water. This figure is not only useful as a measure of relative abundance of a fish species in any body of water but it is vital for fishing entrepreneurship. This datum refers to each fishing gear, body of water, particular area of a body water and time of the year. The commonest fishing gears used on Uganda lakes are the gillnets, fish traps weirs long lines and basket trays. The most popular fishing gear is the gill net and it is the one which will be investigated .

Rationale

SPEED is interested in supporting micro, small and medium enterprises (MSME's). The catch per unit effort for a species with a particular fishing gear is of great interest in feasibility studies. At the moment this information is not available for almost all bodies of water according to area of a lake, season etc. SPEED will need availability of this information for use in feasibility studies for the small enterprises of actual fishing in which school leavers of working age may need assistance. Experimental fishing will need to be carried out using gillnets of 5" mash size, 26 meshes deep and 100 yards long noting the different mounting ratios used and set in certain depths which will be recorded.

Expected Inputs

- Preparation of scope of work for a company to carry out experimental fishing on lake Victoria, Lake Kyoga complex, Lake Albert, other selected minor lakes and the Albert Nile.
- Recruitment of company to carry out experimental fishing to provide the catch per unit effort for different lakes with variation of certain factors.

Expected Outputs

- Accurate data on catch per unit effort by species, lake, fishing grounds, season and gillnet mounting at different ratios.

Beneficiaries

- SPEED planners and investor will be able to use the data obtained for feasibility studies.

Consultant

A firm to carry out the work will have the following expertise.

- A fishing gear technologist with at least five years experience
- Fishing crew with knowledge of mounting, setting, hauling gillnets and species of fish of Uganda lakes.

Duration

- The firm will carry out the work in three months within a period of six months to catch variations of seasons and within a season.

Assumption

It is hoped that funds will be available to carry out this activity

9. Support For Sport Fishing Enterprises.**Background**

Uganda has good sport fish species. These include the Nile Perch (*Lates niloticus*), the Barbel (*Barbus altianalis*). These are found on Lake Victoria, the Victoria Nile, Lake Kyoga,. There is also the Nile Perch and the ferocious fighter, the Tiger fish on lake Albert and the Albert Nile. Sport fishing can be undertaken anywhere along the Lake Victoria shore, at Namasagali in Kamuli District Bbaale in Kayunga District on the Victoria Nile, Butiaba and Wanseko on Lake Albert in Masindi District among other places. Currently sport fishing is being done at Entebbe and Jinja on Lake Victoria and at Paraa Lodge on the Nile.

Rationale

Sport fishing is a foreign exchange earner. If sport fishing enterprises are set up, tourists can pay for hired vehicles to sport fishing spots.

Hire fishing tackle, boats and outboard engines. This is in a form of revenue if a sport fishing enterprise is established. SPEED should support an enterprise of this nature if approached.

Expected Input

- Preparation of scope of work for a consultant to work out a “typical” feasibility study for the establishment of a sport fishing enterprise.
- Support for a feasibility study for sport fishing

Expected Outputs

- There will be an alternative field for investment in fisheries.

Beneficiaries

- Investors will obtain revenue from the establishment of sport fishing enterprises.
- The country will earn foreign exchange.

Consultant

- A consultant preferably from the United States of America will carry out a feasibility study. He will be a person with experience in this field.

Duration

- The consultant will be required to finish the work in 45 days.

Assumption

- It is hoped that money will be available to carry out the study.

N.B. Tabular summaries for the Interim report and the proposals for SPEED fisheries strategy work plan -2002 can be found on the different files hereon.