

Project Name	AwF-WFC Project: Sustaining famine mitigation through integrated aquaculture-agriculture in Traditional Authority Mavwere, Mchinji District in Malawi .
Fund Applying to	Aquaculture Without Frontiers
Applying Agency	WorldFish Center, Malawi Office P.O Box 229 Zomba Malawi Tel: +265 1 536 313 Fax: +265 1 536 274 www.worldfishcenter.org
Location	Mavwere Traditional Authority, Mchinji District , Malawi
Duration	12 months
Expected starting date	1 st January 2007
Submission date	17 th October 2006
Project Cost	USD 8,000

Summary

In the fight against poverty in Africa there is an urgent need for greater investment in human health. In doing so there is an important role for fish and fisheries that support the livelihoods of millions of poor people on the continent. Small-scale fisheries in particular provide food and nutrition security, and generate economic opportunities for the poor throughout society, including those living with HIV/AIDS.

Integrated aquaculture-agriculture (IAA) in Malawi introduced by the WorldFish Center has shown that IAA farms can produce more food than farms where integrated aquaculture-agriculture is absent (Dey et al. 2004). For example, fish production in small scale fish ponds not integrated with agriculture is around 800kg per hectare per year while in integrated aquaculture-agriculture farms fish production is over 1800kg per hectare per year. For the maize staple, production in IAA systems ranges from 4 to 6 tons per hectare and this is three times higher than that obtained on farms without IAA. The maize produced using irrigation water from ponds is enough to feed a household of five for an extra five months. Such benefits of IAA are crucial in a country where over 4 million people face a food deficit every year.

The basic principle of integrated aquaculture-agriculture is to grow fish in water bodies that are closely integrated into household farm, and intentionally make use of the resource flows of all the diverse activities on a farm such as livestock, vegetables and crops. The major aim is to convert agricultural wastes and manure into high quality fish protein, use the nutrients generated in the pond as fertilizers for growing crops, to reduce the need for off-farm inputs and to grow vegetables around the pond by

using it as a small on-farm water reservoir, and with the additional option to grow vegetables, maize and rice in residual moisture of the ponds in times of drought (appendix 1)

Building on knowledge of this nexus between aquaculture on one hand and food and nutritional security on the other, support for capacity building is being sought to strengthen the capacity of small-scale farmers in the Central District of Malawi. The program will promote integrated agriculture aquaculture in order to help the local communities achieve their goal of reducing poverty and improve food security, nutritional status, increase income and upgrade their standard of living. The Programme will focus on the development of practical and sustainable solutions to the development of pond aquaculture through two main areas:

1. Improvement in fingerling availability and accessibility through the identification and training of specialised village fingerling producers.
2. Capacity building of small-scale farmers on the farmer-to-farmer extension concept to improve and sustain extension services at local level.

Background and Justification

In Malawi, pond aquaculture has grown by over 300 percent over the past few years from about 2000 farmers 1999 to about 6000 farmers by 2005. This change has resulted from the implementation of the farmer-scientist research partnership approach, which has increased technology transfer and increased NGO involvement in the dissemination of Integrated Aquaculture Agriculture (IAA). However aquaculture in Malawi is still very small currently contributing about 2% to total fish production.

One of the areas where IAA was introduced as part of the dissemination process by WorldFish Center is Mavwere Area in Mchinji District. The initiative in the area started in 2002 with very few farmers but currently the number has grown to over 350 with over 500 ponds. Due to the high increase in numbers of farmers within a very short period, back-up service especially fingerling sources and extension have become so limiting. Recent visit to the area has shown that new ponds are now being stocked with slow growing wild cichlids (*Haplochromis* species). Additionally, the district has only one extension officer making it difficult for the farmers to get adequate extension services. It is for these reasons that a project should be set up to help in the availability of good fingerlings and institutionalise a reliable community based extension service.

The project targets the rural fish farmers practicing fish farming in Mavwere Area. The beneficiaries will be provided with an integrated fish farming training for growing tilapias grow different vegetables and crops besides poultry and livestock. This will result in an increase of their income, which will ultimately improve their financial status and improve their well-being. The activities will also include poor families since in fish farming total investments and risks are so minimal.

With improved fingerling quality and accessibility coupled with good extension services average yield is likely to increase from the current 800-1000Kgs/ha/year to 2500kg/ha/year. With the current 500 ponds of 250m² on average, the area is likely to produce 31250kgs valued at 7,812,500.00 Malawi Kwacha (USD 50,000). The water surface will be able to support a second production of more than 20 hectares of the staple, maize enough to feed 1000 people for 4 months.

The Programme

Building on activities already underway in Mavwere Area, the programme will pursue a range of development activities that address key priorities for knowledge and capacity building in the promotion of IAA. These activities will be pursued through a network of partners in the project area in local leadership, training, community based monitoring and marketing. Importantly, this work will stimulate further linkages between agencies in fisheries, agriculture, health, nutrition and District Administration sectors that will have started to collaborate to develop innovative solutions.

The main goal of the Programme is to promote sustainable integrated aquaculture-agriculture that will help the local communities to achieve their goal of reducing poverty and improve food security, nutritional status and increase household incomes.

To achieve this overall objective, work will be pursued in two main areas:

1. Improved fingerling availability and accessibility through the identification and training of specialised village fingerling producers.

The demonstrated benefits of integrated aquaculture has led to the incorporation of integrated aquaculture-agriculture into integrated rural development programs of NGO's who in turn are using community mobilization techniques to accelerate the adoption of aquaculture. The rapid adoption of aquaculture has led to increased demand of fingerlings such that the existing number of private fingerling suppliers and government stations can not produce fingerlings of the required quantity and quality at the right time to satisfy demand. Lack of fingerlings, therefore has become one of the major constraints to the further adoption of integrated aquaculture in Malawi. Recognizing this, the project will establish partnerships to develop technologies for fingerling production and to produce core group of fingerling producers among the 500 farmers that have adopted integrated aquaculture in the proposed project area. This will involve community mobilization and strengthening of village institutional structures that can support a network of fingerling producers, provision of enabling environment for the production of fingerlings, development of strategies for the marketing and distribution of fingerlings, technology dissemination and the participatory monitoring and evaluation of the activities.

Outputs

Appropriate fingerling production technology for use by small-scale farmers

Increased availability of good quality fingerlings amongst farmers

Replicable fingerling marketing model for the small-scale farmers

2. Capacity building of small-scale farmers on the farmer-to-farmer extension concept to improve and sustain extension services at local level.

One of the critical constraints to aquaculture development in Malawi is the weakness of aquaculture support services, brought about by inadequate government resources. Thirteen aquaculture development stations and 41 aquaculture extension officers are insufficient to meet the most basic operational requirements to assist the widely dispersed fish farmers in Malawi. Furthermore, the Department of Fisheries (DoF) can not afford to send extension staff on refresher courses, resulting in antiquated extension messages apart from the low remuneration packages that demotivate the staff.

Promoting farmer-to-farmer extension through strengthening capacities of such farmers can largely contribute efficient as well as effective aquaculture extension in Malawi. The farmer-to-farmer extension does not only subsidize the existing government extension system, but also has its own merit. Being handled by farmers themselves, advises and information exchanged through it will be more farmer centered.

The project will identify a number of lead farmers in every village of the project area. These farmers will be trained in basic aquaculture technologies from pond construction to the production of sellable fish. They will also be trained on extension delivery skills including leadership and group dynamics. This arrangement will form a basis for more farmer organisation for marketing of their aquaculture and crop products.

Outputs

- Fish farmer networks strengthened and expanded
- Increased fish production by at least two fold.
- A Chichewa version of simplified farmer led extension guidelines
- Community based monitoring and evaluation system

Monitoring and Evaluation

Project monitoring has been inbuilt in the project design to monitor the inputs supplied to the communities, the implementation process and the impacts of the project. Communities will be involved in monitoring all these areas (inputs, process, and impact).

Community Based Monitoring and Evaluation

Communities will not only have been trained in technologies and provided with inputs but will also be involved in the day-to-day monitoring of the inputs and process to emphasise on self-reliance and ownership of the activities. The project will use indicators to be developed by village committees. The village committees will report progress and issues to the Village Development Committee (VDC), which comprises of so many villages. The VDC will again be required to report to Area Development Committee (ADC) on monthly basis.

WorldFish Center will be responsible for the day-to-day management of the project. The WorldFish Portfolio Director will be responsible for communication with AWF on the project's progress including presentation of financial and narrative reports and to ensure project records are accurately maintained.

The implementing agency

WorldFish has maintained an office in Malawi since 1987. Originally under German funding, the Malawi office has since 1994 been supported by WorldFish core resources supplemented with various small projects which complement core research focusing on understanding and improving African smallholder aquaculture systems. A recent study (Dey et al., 2004) illustrates the positive impacts of these investments on aquaculture development in Malawi. These positive impacts have been achieved through partnerships with local communities, NGO's and government agencies. In recognition of its successes in implementing research and development through partnerships, the center was awarded the 2004 CGIAR partnership award.

Through its work in Malawi, Ghana and several countries in Asia, WorldFish has developed the FSRP (Farmer-Scientist Research Partnership) and Research Extension Team (RET) models for IAA development extension in Africa. These form a set of dynamic protocols, which guide scientists and extension workers through the farmer-participatory research and development process. Because of their proven worth in pilot studies and trials, the FSRP/RET approach is now the Malawi Government's official aquaculture research, development and extension paradigm with WorldFish in charge of implementation. It is primarily the FSRP and the RETs that facilitate its use, which WorldFish plans to disseminate through this project. WorldFish has also translated its results into policy relevant information which has been used by policy makers to incorporate fisheries into the Malawi Poverty Reduction Strategy Paper document and the Malawi Policy on Food and Nutritional Security.

stakeholders in the target area												
2.4 Facilitate community project monitoring and Extension												
2.5 Develop guidelines for farmer led extension												
2.6 In conjunction with farmer extensionists train farmers in IAA best practices												
2.7. Promote fish and crop production through best practices of IAA												
2.8. Conduct technical backstopping visits												
2.9 Document and publish success stories on AWF website												

Appendix 2: The IAA model (illustration not shown on this website)

ADDENDA

Added information contained in TAG correspondence between project initiators and TAG Chairman Geoff Allan

----- Forwarded by Geoff Allan/DPI/NSW on 03/01/2007 04:10 PM -----

Dear Michael and Geoff,

Thanks once again for your strong willingness to support this project that will impact lives of poor households in Mavwere Area, Mchinji District of Malawi. As stated in the e-mail this morning, we failed to respond to the issues Geoff raised in December because of other equally important activities towards the end of year.

We have revised the ghannt chart and budget from Geoff's comments. Main changes on the ghannt chart are highlighted in yellow. The budget has been reduced to US\$8,000 from 10,000 because we do not have any directly supported activity on fish farming in the area and this is the reason why we sought this support.

As indicated in the proposal, Aquaculture in the area was initiated by WorldFish Center in 2002 in partnership with an NGO abbreviated (VIFORD) and Department of Fisheries. Unfortunately the NGO withdrew from the area in 2004 and the department had no officer from the same year. However the number of farmers continued to grow from slightly over 50 in 2002 to 350 by end of 2006. These new entrants are learning from their fellow farmers unfortunately fingerlings sources extension support are not there. Better fingerlings can only be sourced from Bunda College, about 120kms away at a cost of K8 (about 7 cents) each. Farmers can not afford traveling that distance let alone the prohibiting cost of fingerlings. The district had no Fisheries Officer until recently (November).

The project therefore intends to train local fingerling producers and promote best practices on Integrated Aquaculture Agriculture (IAA). We will do this by making the whole implementation process led by the farmers themselves with linkages to decentralization structures namely: Village Development Committees (VDC), Area Development Committees (ADC) and the District Assembly.

The project will also be linked to other projects the WorldFish is implementing in other areas namely:

- a) Developing a standard fish production system funded by USAID. This project will produce a trainers' guide and a farmer user-friendly handbook. The production system and extension materials produced will be used in this project.
- b) Adapting Fish farming to HIV/AIDS affected households that will be funded by the National Aids Commission of Malawi in the nearest district of Lilongwe. The project aims at modifying technologies to suit HIV/AIDS affected households to boost fish and crop production which will eventually improve nutrition and incomes of the affected households.
- c) World Vision is starting a livelihood project in the area and the project will benefit from their expertise in community mobilization and increased outreach capacity.

The project will also benefit from experiences obtained from implementing a similar project in Malawi, Zambia and Mozambique which was funded by the Opec development fund. The Department has recently sent a District Fisheries Officer that will be very useful for regular monitoring

The main project staff in the project are:

1. Dr Daniel Jamu, Regional Director, WorldFish Center, East and Southern Africa, Box 229 Zomba, Malawi. Email: dmjamu@sdpn.org.mw
2. Joseph Nagoli (Project Leader), WorldFish Center, Box 229, Zomba.
3. Lars Windmar, Rural Development Specialist, WorldFish Center, Box 229, Zomba
4. B. Somamje, District Fisheries Officer

The budget only covers operations for implementation of activities and not personnel and other office overheads. In total WorldFish's contribution in terms of personnel time, office equipments, vehicle, supplies (fish stocks) etc should be in excess of US\$ 10,000.

Once we receive an official approval of the project we will have to sign an agreement that will specify reports (technical & financial) and their frequencies preferably quarterly to monitor progress.

I hope this has clarified the issues Geoff raised. You can contact me again should there be any issue to clarify.

I once again thank you for your interest in promoting aquaculture in Malawi. We look forward to a strong partnership even beyond this project.

Joseph