



Policy Brief | 2011-31

Fish Production in Refugee Camps and Settlements: Lessons from Zambia*

INTRODUCTION

Conflict, persecution and violence affect millions of people worldwide, forcing them to uproot their lives. Refugees are individuals who flee their countries of origin across national borders, often to a neighbouring country¹. The attention of the international community is focused on meeting the basic needs of refugee populations, but recently this support has been extended to include the host countries (many of which are Food Deficit Least Developed Countries) in order to strengthen their capacity to provide food, goods and services to refugee populations. The number of programs that generate benefits for both refugees and local communities in terms of food security, livelihoods and local economic opportunities is increasing. Among these programs are several that include fish production as a means of providing nutritious food and small-scale income opportunities to refugees and their host communities (UNHCR 2005b, UNHCR 2005c, and UNHCR 2001). The objective of this Policy Brief is to highlight key lessons from these programs with a particular emphasis on Zambia.

The Project *Introducing/Maintaining fish production in and around refugee camps and settlements to secure food production and generate income*² provides a better understanding of the role that fish production plays in refugee camp environments in Zambia. Data about fisheries and aquaculture activities in Zambian refugee camps were collected by the WorldFish Centre in 2010.

One hundred twenty-two (122) Zambian and refugee fish farmers and eighty (80) refugee fishers were interviewed in Meheba³ and Mayukwayukwa⁴ Settlements and Kala⁵ and Mwange⁶ Camps.

Findings from this project are of timely interest to policy makers, planners and aid organisations that are involved in developing livelihood support in refugee camp environments. General policy recommendations are made at the end of the brief to guide future fish production-related planning in refugee environments.



* Refugee camp environments include the refugees as well as the local host communities which are living in close proximity to the refugee camp or settlement.

1 "A refugee is a person who, owing to a well-founded fear of persecution for reasons of race, religion, nationality or political opinion, is outside the country of his nationality and is unable or, owing to such fear, unwilling to avail himself of the protection of that country". (1951 Convention relating to the Status of Refugees).

2 Funded by the Federal Ministry for Economic Cooperation and Development (BMZ) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

3 Meheba Settlement was established and officially opened in 1971. In 2010, Meheba hosted around 16,000 refugees. However, refugees from all other camps and settlements will be resettled to Meheba if they are not willing to repatriate. It is the biggest settlement in Zambia and covers an official area of 720 km².

4 Mayukwayukwa Settlement was established in 1966 and is one of the oldest refugee settlements in Africa. The site of the settlement covers an area of about 150 km². Mayukwayukwa is scheduled to close down in 2013.

5 Kala Camp was opened in August 2000. The total size of the camp is only around 3 km². Refugees from Kala camp were either repatriated or moved to Meheba Refugee Settlement at the end of 2010. It is now closed.

6 Mwange Camp was opened in 1999. It has a total area of about 3 km². Refugees from Kala camp were either repatriated or moved to Meheba Refugee Settlement at the end of 2010. It is now closed.

KEY MESSAGES

- Fish is in great demand as nutritious food in refugee camps and neighbouring settlements. It is obtained locally from fish ponds as well as from rivers and lakes. The fish trade provides not only income opportunities for refugees and host communities, but can strengthen the bonds between the two groups.
- Women participate in fish production in refugee camps and settlement environments. They are involved in fishing (mainly small fish) and fish drying, as well as in fish farming activities.
- Aquaculture can be integrated with other agricultural activities. Integrated Agriculture and Aquaculture (IAA) can enhance both agricultural productivity and fish production.

KEY POLICY

RECOMMENDATIONS

AIMED AT INCREASING THE BENEFITS OF AQUACULTURE

- Promote and regulate fish farming and fishing activities where the appropriate conditions prevail
- Build commercial linkages with private sector suppliers and host communities
- Focus fish farming programs on the specific priorities of women and children to reduce their vulnerability
- Facilitate the continuity of fish farming and related businesses when refugees repatriate

The Role of Fish in the Refugee Camps and Settlements

In Zambia, fish is a popular food item sold in dried form in all markets inside the camps and settlements. Both Zambian and refugee fish farmers reported that fresh fish from the ponds are highly popular and sell quickly from the pond side. But not all fish are sold—almost all of the fish farmers and fishers interviewed reported that they give fish away as gifts to extended family members, neighbours, and friends in order to maintain and strengthen social relations. In addition, because access to money is limited within the camps and settlements, fish have



become an important trade item and are used as payment for pond or farm labour. This is true of both refugees and Zambians.

“We do this (give fish away) to help each other. When my food is low and my family is hungry, my neighbour will help me if she has extra harvests.” (Refugee fish farmer on why she gives fish away to neighbours)

Fishing Activities in Zambian Refugee Camps and Settlements

This study establishes that refugee men, women and children engage in fishing inside camps and settlements. A third of refugees who fished had also fished in their country of origin. Men primarily use boats and/or nets or traps, women tend to use mosquito nets, and children fish with simple hooks and lines. Refugee women catch mainly small fish (Thilsted et al., 1997), which suggests that their fish are more likely to be distributed equitably among household members than are larger fish or other animal-source foods.



A small lake in Meheba refugee settlement provides opportunities for the men living close by to fish on a regular basis. Because boats and large nets are used, women do not fish there. The lake fishers are strongly territorial and do not allow refugees from other areas of the camp to fish the lake.

“Eeeeh! We do not go to the lake for fishing. Just some months ago my friend tried and he was boxed down by those fishers fishing there and he had to run away.” (Comment by refugee fisher living approximately 4 km from the lake)

Income from fishing varies widely and can bring in between US\$ 0.50 and US\$ 63 per day. Lower earnings from fishing were mainly reported by individuals fishing inside the camp or settlement and were probably due to over-fishing, while higher incomes were reported by fishers leaving the camps for several months to fish in large rivers and lakes.

Only male refugee fishers leave the camps to fish and they often travel great distances (2-3 biking days/ 60-100 km) to larger bodies of water where they stay for 2-6 months, leaving spouses and children behind.

In a Nutshell: Fishing in the Refugee Camps and Settlements

Fishing provides opportunity for men, women, and children.

Refugees fish in small streams and lakes within the settlements and also in larger water bodies outside the camps/settlements.

Competition for fishing grounds in small bodies of water within or close to camps quickly limits participation by newcomers.

Men may migrate seasonally from the camps to join larger fisheries, where they rent boats and nets in exchange for part of the catch. They often transport their dried catch back to the camps where prices are high.

The relationship between the refugees and Zambian fishers is mostly positive. One third of the refugee fishers were also fishers before fleeing their country of origin.

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Catches are frequently used as payment for use of boats and nets. A few refugee fishermen build their own boats every fishing season and generate enough income to buy their own nets. Most fish from lakes and rivers is dried by Zambian women before it is traded. Many of the fishermen reported hiring bicycle couriers to transport the dried fish back to the camps where prices were higher than at the lake or river where the fish were caught.

“They (Congolese refugees) go to the big lakes and buy fish there, then they transport them back to the camp where they sell the fish at a higher price. They were then able to buy solar panels which they use to charge cell phones for money. They are now purchasing solar panels and selling these as well in the market inside the camp. I have learned from them and have also started buying fish at the lake and selling it on the refugee camp market.” (Comment by local Zambian)

Refugees report no real problem with local fishers in terms of competition unless they catch significantly more than their local fisher colleagues. In this case, refugees

are expected to give some of the catch to Zambian fishers. In most cases, however, the relationship between Zambians and refugees is positive.

Aquaculture in Zambian Refugee Camps and Settlement Environments

After receiving project support in the early 1980s in Meheba Settlement and support in early 2000 in both northern camps, aquaculture is still practiced there. Fish farmers that were interviewed had been engaged in aquaculture from 4 months to 25 years, with an average of 3 years participation. Typically, all family members helped to maintain the pond. In Mayukwayukwa and Meheba, fish ponds were located and maintained inside and outside of the camps while in the former northern camps, fish ponds were mainly situated outside of the camps. Ponds produced sufficient fish for consumption in all areas and some ponds even produced a surplus and thus generated income. Most ponds, however, were less productive than they should have been due to dwindling input supplies, little technical support, and poor knowledge transfer.



In a Nutshell: Aquaculture in the Zambian Camps and Settlement Environments

Men, women, and children are involved in fish farming activities.

Fish is produced for both consumption and income.

Refugees feel a sense of ownership towards the ponds and even sell them to other families before leaving.

Active fish farmers enjoy greater food security (more meals a day) than other people in the camps.

In Meheba and Mayukwayukwa, refugees and even some local Zambians were fish farming inside the settlement. Aquaculture production had not reached its full potential in any of the areas. However, many of the refugees and Zambians were able to obtain money in an environment where access to cash is difficult. This study found that 44% of refugees who farm fish do so in order to generate income. Income from aquaculture ranged from US\$ 1.50 to US\$ 105 per harvest. Most of the successful fish farmers harvested two times per year.

All fish farmers kept fish for their own consumption, taking fish out of the pond between harvests to eat or sell. This flexibility is an important benefit of fish ponds, in addition to the value of major harvests. The study found that those still engaged in fish farming ate more meals per day (2.3 compared with 1.9) than former fish farmers. Where there was a fish pond in the settlement, refugee fish farmers felt that they owned the pond and the land it was on. Within both camps and settlements, refugees sold properties to other refugees when they left the camps or moved to more central locations within the camps/settlements.

Since fish farming is not as labour intensive as fishing or crop farming, women and children often adopt it to augment their other activities (WorldFish/World Vision, 2007).

Furthermore, it is culturally acceptable in countries like Bangladesh, where women are only allowed to work within the homestead (WorldFish Centre, 2006). In the Zambia study, female and male refugees were equally involved in fish farming. Female fish farmers originated from the Democratic Republic of the Congo, Angola, Rwanda and Zambia. Married, divorced, single or widowed, women's marital status did not impact on their ability to practice fish farming.



Policy and Institutional Recommendations for Fish Production in Refugee Environments

Increase self-sufficiency for refugees through fish production

Refugees are often associated with food aid, but many camps and settlements have transformed into small villages with permanent housing with protracted refugees pursuing livelihoods such as farming, fishing, or other types of food or income-generating businesses. Establishment of activities



that develop self-reliance continues to be a challenge however, as there is seldom any legal framework and refugees work in the informal sector or in wage-earning activities that do not adequately remunerate labour (UNHCR 2008a). The United Nations High Commissioner for Refugees (UNHCR) defines a protracted refugee as a person who has been in exile for five years or more in an asylum country. Out of a global total of 11.4 million refugees at the end of 2007, it is estimated that some 6.2 million (54%) are in a protracted situation.⁸ It is thus essential to establish secure livelihood strategies for people living in the camps and settlements and for the surrounding communities, especially where international support is diminishing.

Aquaculture can provide a stable livelihood and provide refugees access to a resource that augments cash incomes. The Zambia study showed that fresh fish was used for food, income generation, and as a valuable gift to strengthen social relationships.

Where aquaculture and fishing is practiced, rights (also ownership) and relationships between refugees and host communities must be formalised. This will facilitate movement, supply chains and trade, and will mitigate conflict.

Integrate fish farming with other agricultural production to strengthen farm productivity and increase nutrition security

Studies have shown that fish is often a better source of protein and micronutrients than plant-source foods, being more concentrated and bioavailable (Kawarazuka 2010). When fish is sold, it indirectly contributes to household food security by increasing household income that can be used to purchase other food commodities, including lower cost staple foods (Kawarazuka and Béné 2010).

8 Of the interviewed fish farmers and fishers, the average had been 18 years in a settlement and 8 years in a camp.

Aquaculture combined with agriculture has the potential to more than double nutrient recycling and improve the economic efficiency of small farms (Dey et al. 2007, Cruz et al. 1992). Important benefits of maintaining fish ponds are the ability they afford for on-farm water harvesting and storage capacity for supplemental irrigation of crops during the dry season, thus allowing the smallholder farm household to hedge against uncertainty of water supply and increase total farm productivity (Dey et al. 2007). When availability of fish differs from that of crops, seasonal vulnerability to hunger is reduced (Islam 2007).

This study found that both refugees and Zambians combined agriculture with aquaculture. Zambians who live close to the camps and practice aquaculture used manure from animals kept inside the camps to fertilise their ponds. However, the use of pond water and mud to improve crop and/or vegetable production was largely unknown and should be systematically integrated into trainings and extension services.

Target fish farming programs at the specific priorities of women and children to reduce their vulnerability

Women can maintain fish ponds and be just as successful as male fish farmers, especially if their pond is located close to the dwelling. If ponds are close to the homestead, women do not have to walk far in order to maintain the pond. In many refugee situations, (single) women and girls can be subjected to sexual harassment or attacks if they move around in sparsely populated areas. Fish farming can be a practical, secure way for women to produce food or income for the family, especially in cultures where women are not allowed to leave the house without the company of a male relative.

Maintaining a fish pond does not require hard labour- unmarried, widowed or single women can produce fish even without an adult male to help maintain the pond. When girls reach adolescence, they are generally expected to spend more time on household activities



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such as cooking, cleaning, collecting water and wood and tending young children, so ponds located near the home are easily managed by young female fish farmers.

Children under 18 years of age were found to have high levels of participation in aquaculture activities. Involving the younger generation serves to keep them integrated in the family and the community and provides them with a valuable skill they can use in the future.

Build linkages with private sector input suppliers

Fish farming in refugee environments is usually initiated through public sector or NGO programs. The present WorldFish study determined that 74% of small-scale fish farmers received external support at some time in the form of training, fingerlings, tools, or feed and fertiliser.

Links with private sector input suppliers must be initiated in order to sustain and increase fish farming production. Refugee camps hosting clusters of fish farmers provide aggregated markets for inputs and services. Linking these clusters with agro-dealers at an early stage can be a key step towards stimulating more sustainable input supply chains. This will be more challenging where fish farmers are few and scattered over large distances. Private sector input suppliers can deliver technical extension and training services such as training hatchery staff to stock and handle seed or how to best use feed. NGOs have demonstrated success in supporting such service delivery in a number of agricultural value chains and this experience can be extended to the aquaculture sector as well. Thus, private sector delivery can complement government-led extension services, depending on national policies and economic conditions.

Strengthen social ties between refugees and the local host communities

A host population may face growing competition for food, employment, services and land when refugees enter their country. The expectations and entitlements of

refugees and host communities with respect to fish farming and fishing need to be well-defined and communicated in order to mitigate tensions and prevent conflict. In the case of Zambia, this has been largely successful. Of the Zambian fish farmers interviewed in the present study, 92% stated that they viewed refugees positively. Of the randomly chosen sample of Zambians living close to the camps, 81% believed the refugees to be worthy of engaging with in business, economy and/or trade. Seventy-one percent of refugee fish farmers interviewed stated that their relationship with Zambians was positive. Overall, this is evidence for largely positive interactions between Zambians and refugees, allowing for successful aquaculture programs that benefit both.

Facilitate continuity of fish farming activities when refugees repatriate

Refugee camps and settlements are often located in remote areas within host countries and the camp and settlement markets may





be the biggest in the area. Food and non-food aid provided to refugees have become valuable trade items in many of these sites. However, when refugees repatriate, markets and businesses disappear as well. Refugees may leave behind fields and fish ponds. In both Kala and Mwangi Camps (which were closing), local Zambians had successfully continued using fish ponds that were originally dug and maintained by refugees, especially if the ponds were located directly outside the camps.

In order to facilitate transfer of property and continuity of businesses, repatriation policies and management should create awareness and build capacity among both refugee and host communities.

CONCLUSIONS/ RECOMMENDATIONS

Where appropriate conditions prevail, promoting fishing and aquaculture in refugee settings can boost the well-being of both local host communities and refugees. Aquaculture

can be integrated with agriculture, enhancing the production of ponds and crops. Fish production allows women and children to contribute to the family food basket. This is especially important in camp and settlement areas where families are often broken up due to the conflict in their home country or because men leave the settlements and camps in order to find work in other areas. In order to sustain and increase fish farming production, links with the private sector need to be initiated to create sustainable partnerships that can gradually assume the main value chain functions.

For further information and pre-conditions needed to establish aquaculture in refugee camp environments, see *Guidelines for Fish Production in long term Refugee Situations in Africa*. The document can be downloaded from the WorldFish website at <http://www.worldfishcenter.org/wfcms/HQ/Default.aspx>.

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