

Aquaculture

concept note 2015



To meet the future need for food caused by the increasing global population, it is necessary that the current food production increases by 70 percent by 2050.

This will result in a massively increased demand on all food products over the years to come. Especially animal protein products, that are already growing in demand in developing countries due to the general improvement on the peoples' livelihood.

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Brief market overview

In Africa, fish is an important food for over 400 million people, contributing essential proteins, minerals and micronutrients to their diets.

Paradoxically, despite the high dependence on fish as a source of animal protein, fish consumption in sub-Saharan Africa is the lowest in the World.

However, the continent is projected to need an additional 1.6 million tons of fish a year by 2015 just to maintain current consumption.

This demand will have increased by a further 2.6 million tons a year by 2030.

Most wild capture fisheries have reached their production limit or are over-fishing. The rapid increase in fish supply required over the next decades will only be possible if the fisheries are sustained and improved while simultaneously developing aquaculture.

Kenya

Kenya's aquaculture sector is dominated by small-scale fish farmers.

More than 95 percent of are small-scale (*average size 300 m²*) with less than five full time employees.

Fishing has proved to be a very good income source for farmers compared to other potential crops and with limited land requirements. At the same time, the fish make out a vital food source for the farmers' families because they are packed with proteins and essential vitamins and minerals.

Production takes place either in ponds, dam/reservoirs or fish tanks, and the most common species farmed are *tilapia* and *catfish* constituting around 90 percent of all the fish farmed.

From 2009 to 2012 the number of fish farmers increased from 6,328 to 49,050 with

a production of 21,500 tons.

Kenya is a water scarce country. Apart from a 536 km coastline on the Indian Ocean, better known bodies of water include Lake Turkana, Lake Naiwasha and part of Lake Victoria.

Challenges

- Inadequate quantity and quality of fingerlings and feeds
- No enforcement of fish standards
- Low level of competitiveness for fish farmers in relation to captured fisheries due to captured fisheries still being governed on a national level
- Exclusion of fish farmers from high-end markets due to inconsistency in supply and uncompetitive prices (*especially high feed costs*) in relation to captured and imported fish
- Limited coordination between research and development sector

Opportunities

- Increased demand for fish. The fishing sector contributes only 1.5 percent of GDP, which is very low compared to its potential
- Regional export markets in the Middle East
- Vital support from NGOs such as Red Cross and Farm Africa
- Increased awareness for consuming and farming fish (*from FFEPP, NGOs and farmer groups*)
- 4 new government fish processing factories
- Nile Tilapia feeds on mosquito larvae and can help combat malaria



Photos:

Fishing vessel off to sea, Tanzania (*left*)
Ships anchoring for the night, Tanzania (*right*)
Small vessel on the Indian Ocean, Tanzania (*opp. side, left*)
Fishing boat on the shore of lake Edward, Uganda (*cover*)

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Tanzania

Aquaculture in Tanzania is characterized by small-scale rural initiatives. The sector is not yet as commercially developed as much as in the neighboring countries, and it has a vast but as yet untapped potential.

Fish farming is often organised on a village level and integrated with agricultural activities such as horticulture and livestock. The fish ponds are small – often only 150 m². Tanzania is currently estimated to have a total of 14,000-15,000 fresh-water fish-ponds scattered across the mainland. The production has increased from 7,340 tons in 2009 to 9,917 tons in 2012.

In Tanzania, an average farm gate price for a reasonable quality of Tilapia is approx. USD 4 per kg and the retail price is around USD 6.25.

In spite of the high price and the fact that catfish are being imported from Vietnam and China at very low prices, the demand from the retail outlets and hotel/catering industry for quality Tilapia is unsaturated.

Cost of production is around USD 1,5 / kg – using feed of good quality from Egypt (*source: Aller Mølle*).

Challenges

- Inadequate quantity - and especially quality - of fingerlings
- No domestic production of quality feed
- Inadequate extension officers and facilities
- Poor infrastructure
- Weak but up-coming incentives from government
- Limited access to funding

Category	Source	City	Fish type	Price per kg. KES
Fishermen	Ministry of Fishery	Kisumu	Fresh catfish whole	105
Fish Market	Own observation	Kisumu	Fresh catfish whole	140
Fish Market	Own observation	Nairobi	Fresh catfish whole	380
Fish Market	Own observation	Nairobi	Fresh Nile perch fillet	550
Fishermen	Ministry of Fishery	Kisumu	Fresh Nile perch whole	200
Fish Market	Own observation	Kisumu	Fresh Nile perch whole	300
Fish Market	Own observation	Nairobi	Fresh Nile perch whole	380
Fishermen	Ministry of Fishery	Kisumu	Fresh Omena whole	120
Fish Market	Own observation	Nairobi	Fresh tilapia fillet	600
Fish Market	Own observation	Kisumu	Fresh tilapia whole	250
Fishermen	Ministry of Fishery	Kisumu	Fresh tilapia whole	250
Farmer	Avg. price from case studies	Kakamega / Kisumu	Fresh tilapia whole	314
Fish Market	Own observation	Nairobi	Fresh tilapia whole	400
Farmer	Avg. price from case studies	Kakamega / Kisumu	Fried tilapia whole	550
Farmer	Avg. price from case studies	Kakamega / Kisumu	Smoked tilapia whole	427
Fish Market	Own observation	Kakamega	Smoked tilapia whole	500

Opportunities

- A strong local market – unsaturated demand and high prices
- Regional export markets in the Middle East
- Nile tilapia also feed on mosquito larvae, which then can help combat malaria

Based on the established partnership with WWF and Red Cross, private sector can gain access to on-site validation, developing the business cases and test solutions in close interaction with local producers.

Adding to this, access2innovation holds contact to private sector and potential customers in Eastern Africa and can provide an overview of financing opportunities and access to researchers and students with interest in supporting the private sector in conducting market research and developing business cases.

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