

Financial Services for SME Aquaculture and Fisheries Producers

Tanzania Case Study

Final Draft

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Abbreviations

BAP	Best Aquaculture Practice
BMP	Best Management Practice
BMU	Beach Management Unit
BOP	Bottom-of-the-Pyramid
Cif	Cost, insurance and freight
DFID	Department for International Development
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross Domestic Product
GTZ	German Agency for Technical Cooperation/Deutsche Gesellschaft fuer Technische Zusammenarbeit GmbH
Ha	Hectare
HACCP	Hazard Analysis Critical Control Point
IDA	International Development Association
KADETFU	Kagera Development and Credit Revolving Fund
KFCB	Kagera Farmers Co-operative Bank Ltd
LUC	Land Use Certificate
LVFO	Lake Victoria Fisheries Organization
MCS	Monitoring, Control and Surveillance
MDG	Millennium Development Goal
MEG	Marketing and Enterprise Group
MFI	Micro-finance Institution
MLDF	Ministry of Livestock Development and Fisheries
NEPAD	New Partnership for Africa's Development
NGO	Non-governmental Organization
NRI	Natural Resources Institute, University of Greenwich
OECD	Organisation for Economic Co-operation and Development
PESA	Private Enterprise Support Activities
PPP	Private Public Partnership
PRIDE	Promotion of Rural Initiatives and Development Enterprises
SACA	Savings and Credit Association
SACCO	Savings and Credit Co-operative Society
SADC	Southern African Development Community
SMEs	Small and Medium-scale Enterprises
UgoCert	Uganda Organic Certification Ltd
UK	United Kingdom
UNDP	United Nations Development Programme
USD	United States Dollar
WB	World Bank
WTO	World Trade Organization

Exchange rate (November 2010): 1 USD = 1,500 Tshs (Tanzania Shillings)

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Last but not least we would like to thank GTZ for providing the funds for this study. The views expressed here are not necessarily those of GTZ.

Summary

This case study, fieldwork for which has been carried out between 4 – 11 November 2010, focuses on Nile perch fisheries in Kagera Region in Tanzania, and the financial services provided to SME fisherfolk (boat owners, fishermen, and processors). The emphasis was on credit requirements and supply, as well as savings facilities. In addition, light is shed on the emerging small-scale aquaculture sector in the region. Various stakeholders of the financial sector have been visited in Bukoba town, including banks, NGOs, and micro-finance institutions.

Given GTZ's relationship with Vicfish Ltd in Bukoba as part of the project "Eco-labelling of small-scale fisheries", this company was used as the entry point for the study. In addition, senior members of the Fisheries Administration of Kagera Region; Ministry of Livestock Development and Fisheries (MLDF) were involved in the study, and one participated in all activities of the survey work, including visits to three landing sites (i.e. one on an island in Lake Victoria, and two on the mainland).

Tanzania is the main supplier of Nile perch into the EU: 23,300 tonnes in 2008 (27,500 tonnes in 2007). The industry faces two problems, i.e. declining stocks, and competition from pangasius fillets in the market. (Source: FAO Globefish).

Vicfish (Bukoba) has obtained eco-labelling certification in May 2009. Certification body: Naturland; Inspection body: UgoCert in collaboration with TanCert; Capacity building services: AquaEco.

Vicfish (Bukoba) forms part of group of companies including Vicfish Ltd in Mwanza (HQ of group of companies), and Bahari Food in Dar es Salaam. Down from 30 tonnes per day in the previous year, in November 2010 Vicfish Bukoba processed 15 – 20 tonnes of Nile perch per day (6 days per week). Assuming the processing factory works 300 days per annum, this would suggest that the total quantity of Nile perch processed in 2010 was of the order of 4,500 to 6,000 tonnes, yielding about 2,000 to 2,700 tonnes of fillets.

60% - 70% (roughly two thirds) of fish supplied by Vicfish Bukoba is eco-labelled. The company Anova in the Netherlands is the principal buyer of fish (80% of total output) of fish supplied by Vicfish Bukoba. 80% of the fish is sold in the form of chilled fillets, which are transported by truck to Entebbe and from there by air to Europe. The rest is frozen fillets that are transported by truck or train via Mwanza to Dar es Salaam from where they are sea-freighted to overseas markets.

According to the company the decline in throughput was more the result of stricter MCS measures (e.g. fish to be processed should be between 50 and 85 cm long), and less the result of declining stock levels. According to Vicfish management Nile perch stock levels are increasing again.

As part of the eco-labelling scheme, Vicfish Bukoba is dealing with:

- 18 certified suppliers (including 2 that are currently undergoing certification); in addition there are 5 non-certified suppliers; often suppliers are the owners of fishing boats;
- 39 certified collectors; and
- About 730 certified fishermen (i.e. crew of 2 – 3 fishermen per boat) based at eight landing sites.

Eco-labelled Nile perch (i.e. fish coming from a certified stock and supplier), fetches about Tshs 200/kg more compared to non-certified fish. For example:

- Non eco-labelled fish would fetch about Tshs 2,400/kg at a landing site that is not too remote, and eco-labelled fish would fetch Tshs 2,600/kg at a similar landing site.
- By the time the fish reaches the factory, suppliers would be paid Tshs 3,300 for non eco-labelled fish, and Tshs 3,500 for eco-labelled fish (situation in early November 2010).

In particular, credit supply and savings facilities were investigated as part of the field survey. Insurance schemes for fisheries were not encountered.

Fishermen/boat owners have the following capital requirements:

- A new boat with engine (about 10 – 15 hp) would cost approximately Tshs 8 – 10 million (USD 5,330 – USD 6,670). In particular, nets and the engine are the main cost elements;
- A new boat without engine may cost on average about Tshs 1.2 million – 1.5 million (USD 800 – USD 1000);
- Working capital for fishing is less of an issue, in that it mainly involves fuel and food for fishermen.

The following sources of capital and credit have been encountered:

- Several boatowners met have worked their way up in that they started in the 1990s with a relatively small amount of equity (e.g. from agricultural production or from inheritance), and now own several boats (e.g. 6 or more boats);
- Vicfish Bukoba has provided interest free loans to 18 suppliers totalling Tshs 268 million (USD 179,000) in the form of cheques or cash, plus Tshs 250 million (USD 167,000) for engines and nets.
- Very few fishermen have obtained loans as part of a group from micro-finance institutions or NGOs such as PRIDE.
- Relatives and friends can lend money (smaller amounts, short term, sometimes interest has to be paid);
- Informal Rotating Savings and Credit Associations (ROSCAs) can be a source of relatively small amounts of credit, in particular also for women fish traders / processors.

Several banks and microfinance institutions/NGOs have been visited in Bukoba (e.g. CRDB, KFCB, NMB, KADETFU, PRIDE). According to the majority of them, fishermen tend to have a poor reputation as far as loans are concerned (e.g. no collateral, money has been lost due to missing boats or investment in the wrong type of business). At the same time, larger fish suppliers can obtain credit but this may be for other businesses (e.g. hotel) and they can provide collateral in the form of title deeds for houses.

Fishermen can save or open accounts provided they respect the procedures. For fishing communities closer to town this seems easier, whilst communities in remote areas seem to struggle with this (e.g. transport costs can be an issue); Larger-scale fish suppliers may have several accounts, also because Vicfish pay them by cheque.

Mobile banking on the lake is not seen favourably due to security concerns. Money transactions through the mobile phone network are on the increase, although those who want to withdraw cash need to travel to town.

In sum:

- There appears to be little need for additional loans for fishers to buy extra boats for Nile perch fishing, in that the number available seems to be sufficient. For example, the results of the Lake Victoria Fisheries Frame Survey of 2008 indicate that the number of fishers increased from 18,953 in 2006 to 23,220 in 2008 in Kagera Region. The number of fishing crafts went up from 6,799 to 8,146 in the region during the same period. As a result, more boats are likely to increase the risk of overfishing.
- In terms of savings, banks and microfinance institutions can do more to cater for fisherfolk, including provision of education in financial management. At the same time, interest rates on savings accounts are very low at present (i.e. 2.5% - 3% p.a. compared to 18 – 24% for credits).
- Given the increase of interest in aquaculture (e.g. there are about 200 small-scale producers in the region, producing for example tilapia), more emphasis should be placed on credit for aquaculture. Vicfish Ltd has already obtained land for aquaculture production (i.e. over 100 hectares).
- As for examples on how loans can be channelled through the financial system, lessons can be learnt from the agricultural sector (e.g. Agricultural inputs trust fund).

Methodology

This GTZ funded case study “Financial services for SME aquaculture producers in Tanzania” was carried out as part of a wider initiative entitled “Establishing a Fisheries and Aquaculture Investment Partnership”, which is being prepared by the Development Bank of South Africa, in partnership with the Natural Resources Institute (NRI), for NEPAD (New Partnership for Africa’s Development).

The field survey for this case study was undertaken between 4 – 11 November 2010. The focus was on the following:

- Nile perch fisheries in Kagera Region in Tanzania, and the financial services provided to SME fisherfolk (boat owners, fishermen, and processors). The emphasis was on credit requirements and supply, as well as savings facilities. In addition, light is shed on the emerging small-scale aquaculture sector in the region. Various stakeholders of the financial sector have been visited in Bukoba town, including banks, NGOs, and micro-finance institutions.
- Visits to three landing sites: Nyamkazi (on mainland next to Vicfish Ltd factory; principal landing site; eco-labelled); Nyaburo (island, part of project area but not yet eco-labelled); Mashanga (remote landing site on mainland, not eco-labelled).
- Value chain analysis (VCA) approach was used to map the Nile perch export sector, and assess financial services relationships between stakeholders.
- Semi-structured interviews, participatory focus group discussions and direct observations were the main tools and techniques used to carry out the fieldwork;
- As for financial services, the emphasis was on credit (loan requirements and sources of credit), and savings. No insurance services were encountered in fisheries or aquaculture context. Nonetheless, some insurance related findings from the Vietnam case study are provided in Annex 4.

Background to the economy

Primary sector activities constitute the backbone of the Tanzanian economy. According to the Poverty and Human Development Tanzania country report, agriculture, hunting and forestry contributed 24.0% of GDP in 2008, down from 29.6% in 1998¹. Meanwhile, the contribution of services to the GDP has expanded from 45.2% to 47.8% during this period of time.

Fishing contributed 1.5% to the GDP in 2008, compared to 1.8% in 1998. In particular, Nile perch exports are one of the country’s major foreign exchange earners. Also, the sector creates significant numbers of employment (e.g. for fishers, processing factory workers, and workers in ancillary services).

¹ Research and Analysis Working Group, United Republic of Tanzania. 'Poverty and Human Development Report 2009'. Dar es Salaam, Tanzania.

Overview of Nile perch export sector

The fisheries sector in Tanzania is dominated by the artisanal Nile perch fishery on Lake Victoria – i.e. in terms of volume, landed value, export revenue and government tax revenues (Wilson, 2004).

According to LVFO (www.lvfo.org), Lake Victoria is the most productive freshwater fishery in Africa. The quantity of fish caught in the lake is of the order of 800,000 – 1,000,000 tonnes valued at USD 350 – 400 million p.a., with export earnings estimated at USD 250 million. The three main fish stocks in Lake Victoria are Nile perch (*Lates niloticus*), Rastrineobola argentea (*Dagaa, Omena or Mukene*) and Nile Tilapia (*Oreochromis niloticus*). The bulk of Nile perch is destined for export (chilled and frozen fillets) while *dagaa* and tilapia are destined for the regional and local markets. Also, smoked or sun dried by-products from Nile perch processing are consumed within the region.

According to LVFO (Frame survey), the fishing effort on Lake Victoria has increased substantially between 2000 and 2006. The number of fishers increased by 52% from 129,305 to 196,426, and the number of fishing crafts using outboard engines went up by 211% from 4,108 to over 12,700.

As the LVFO website (www.lvfo.org) states, continued Nile perch fishing at current effort levels will most likely result in declining catches and biomass. Allowing Nile perch fishing efforts continue to increase is likely to lead to overexploitation of the stock and effort should be halted.

FAO/Globefish (Nile perch – August 2009, www.globefish.org) report declining supplies of Nile perch fillets to the EU market (i.e. the principal export market for the fish) as shown in Table 1. According to the same source, this is due to dwindling Nile perch resources. In addition, pangasius fillets provide a strong competition for Nile perch. For example, in mid-2009 the price of Nile perch fillets had declined to EUR 6.20/kg from EUR 7.00 the previous year. Further details of Nile perch fillet cif prices in the EU are shown in Annex 3.

Table 1: Imports of Nile perch fillets into the EU ('000 tonnes)

Origin	2005	2006	2007	2008
Kenya	5.2	4.2	5.1	4.0
Tanzania	24.0	23.6	27.5	23.3
Uganda	23.8	21.2	20.2	15.0
Total	53.0	48.9	52.8	42.3

Kagera Region has 169 landing sites. The results of the Lake Victoria Fisheries Frame Survey (MLDF, 2008) indicate that the number of fishers increased from 18,953 in 2006 to 23,220 in 2008 in region. The total number of fishing crafts went up from 6,799 to 8,146 in the region during the same period. In particular, the fisheries activities in Kagera Region are concentrated in Muleba. During the time of the Frame Survey, the majority (68%) of gill nets used had a mesh size of 5" to 6", whilst 7.2% were undersized (i.e. mesh size below 5"). It is understood that in the meantime the minimum mesh size has been increased to 6".

According to the same survey, out of the 169 landing sites in the region, only 10 had bandas (i.e. covered landing site constructions) in 2008, 27 toilets, 22 potable water,

45 boat repair, 35 net repair, and 23 engine repair facilities. There are only two cold rooms in the region but none of them has been operational in 2008. At the same time, 70% of the landing sites in Kagera Region had mobile phone network connections.



Plate 1: Lake Victoria and location of Bukoba Eco-labelling project (Source: GTZ, 2009).

Vicfish Ltd (Bukoba)

Vicfish Bukoba belongs to a company that owns three fish and seafood processing companies in Mwanza (Head quarter, Nile perch processing), Dar es Salaam (seafood processing), and Bukoba (Nile perch processing).

The Bukoba branch of Vicfish exists since 2005. The processing factory is the second largest employer in the town (after Kagera Sugar). Whilst a few years ago the factory employed 700 – 1000 workers, in November 2010 it was about 400 (60% men). Due to the decline in production fewer workers are currently employed. There is only one other fish factory in the region (i.e. Kagera Fish), processing about 10 tonnes of Nile perch per day.

In November 2010, Vicfish Bukoba processes 15 – 20 tonnes of Nile perch per day, 6 days a week. It was reported that normally the company would process 30 tonnes, whilst the capacity is 60 tonnes per day (two shifts). The last time 30 tonnes were processed per day was in 2009. 10 tonnes of Nile perch give approximately 4.5 tonnes of fillets.

Assuming the processing factory works 300 days per annum, would suggest that the total quantity of Nile perch processed in 2010 was of the order of 4,500 to 6,000 tonnes, yielding about 2,000 to 2,700 tonnes of fillets.

60% - 70% (roughly two thirds) of fish supplied by Vicfish Bukoba is eco-labelled. The company Anova Food in the Netherlands is the principal buyer of fish (80% of

total output) supplied by Vicfish Bukoba. 80% of the fish is sold in the form of chilled fillets, which are transported by truck to Entebbe and from there by air to Europe. The rest is frozen fillets which are transported by truck to Mwanza, and from there by train or truck to Dar es Salaam from where they are shipped overseas.

In addition to Europe (mainly supplied through Anova), Vicfish Bukoba supplies smaller markets in the US, Japan, Israel, Iceland, and the Middle East.

According to Vicfish management the decline in throughput was more the result of stricter MCS measures (e.g. fish to be processed has to be between 50 and 85 cm long), and less the result of declining stock levels. According to them Nile perch stock levels are increasing again.



Plate 2: Nile perch processing in Vicfish factory, Bukoba

The Eco-labelling project

As a result of a stakeholder workshop in Nairobi in 2006, a Public Private Partnership (PPP) between GTZ, the European importer Anova Food and the Tanzanian processor Vicfish Ltd was formed in order to implement a pilot project, with the objective of proving the feasibility of eco-labelling the Nile perch small scale fisheries in Lake Victoria (GTZ, 2009).

Other partners in the Bukoba eco-labelling initiative include Government of Tanzania fisheries services, Naturland e.V., which is a certifying association for organic agriculture based in Germany, AquaEco (part of AgroEco), which is a team of specialists providing capacity building services in organic aquaculture and sustainable fisheries, and the inspection bodies UgoCert in collaboration with TanCert.

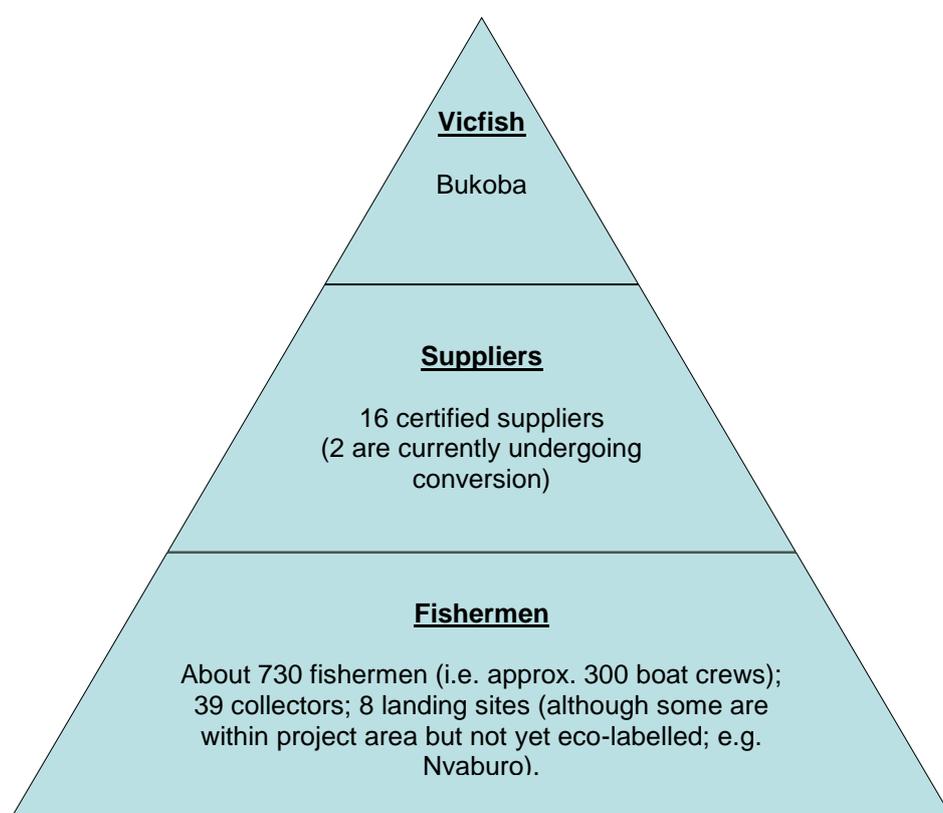


Figure 1: Bukoba Nile perch eco-labelling project

Mainly during the course of two Standard Round Table (SRT) meetings (GTZ et al, 2007 and 2008), a series of 12 standards were jointly elaborated by the aforementioned stakeholders, covering ecological, social, economic and quality standards. Following capacity building by AquaCert, the scheme obtained eco-labelling certification by Naturland in May 2009.

As at November 2010, as part of the eco-labelling scheme, Vicfish Bukoba is dealing with:

- 16 certified suppliers (plus 2 that are currently undergoing certification); in addition there are 5 non-certified suppliers; often suppliers are the owners of fishing boats;
- 39 certified collectors; and
- About 730 certified fishermen (i.e. crew of 2 – 3 fishermen per boat);
- Eight landing sites. Some of the landing sites and BMUs are within the project area but not eco-labelled, as yet (e.g. Nyaburo).

(See Figure 1).

The Nile perch value chain in Bukoba

Table 2 provides an overview of the Nile perch value chain in and around Bukoba (i.e. Kagera region). Vicfish Ltd (Bukoba) are at the heart of the Nile perch value chain in Kagera region in that they are the larger of only two processing factories in the region. As at November 2010, they process 15 – 20 tonnes of Nile perch per day compared to about 10 tonnes per day by Kagera Fisheries.

Suppliers and collectors also play an important role in the value chain in that they tend to be the main owners of boats. Some of them have a substantial number of boats (e.g. 5 to 30 motorised or non-motorised). Fishermen usually do not own the boats but are part of crews operating them. Crews tend to consist of 2 fishermen if the boat is non-motorised, and 3 if it is motorised. Also, whilst often working in established teams, fishers may also hire helpers who accompany them during a fishing expedition on the lake (usually lasting from 4pm until 7am the following day).

Fishers and boat owners follow a standard formula of sharing the income from the catch. After the running expenses (e.g. fuel) are deducted from the value of the catch, the boat owner will obtain 60% and the crew 40% of the remaining amount.

As shown in Table 2, eco-labelled Nile perch (i.e. fish coming from a certified stock and supplier), fetches about Tshs 200/kg more compared to non-certified fish. For example:

- Non eco-labelled fish would fetch about Tshs 2,400/kg at a landing site that is not too remote, and eco-labelled fish would fetch Tshs 2,600/kg at a similar landing site.
- By the time the fish reaches the factory, suppliers would be paid Tshs 3,300 for non eco-labelled fish, and Tshs 3,500 for eco-labelled fish (situation in early November 2010).

In addition to the fact that prices for eco-labelled Nile perch are higher, Table 2 demonstrates that prices are influenced by the location. Whilst fishers at a remote landing site (e.g. Mashanga) are disadvantaged by their location and tend to receive a low price for their Nile perch, those close to the factory (e.g. Nyamkazi) will obtain significantly higher prices.

According to Yang (2009), the expectancy of a price premium and the expectancy of better health through ecolabeling have significantly positive impacts on the decision to participate in the eco-labelling scheme.

A share of the export earnings from eco-labelled fish (USD 0.10/kg) will be paid by Vicfish Bukoba into the Vicfish Development Trust Fund. The account of the latter will be managed by representatives of the key stakeholders concerned: i.e. Vicfish, Anova, BMUs, Government Fisheries Services, GTZ. In particular, the funds will be

used for social and other services of concern to the local communities. Although it is understood that the trust fund exists, no money has been disbursed as at November 2010.

Table 2: Prices obtained for Nile perch at each stage in the value chain

Stages in the Value Chain	<u>Eco-labelled</u> Price obtained (Tshs/kg)	<u>Not eco-labelled</u> Price obtained (Tshs/kg)
<p style="text-align: center;">Fishers</p> <p style="text-align: center;">Collectors</p> <p style="text-align: center;">Suppliers</p> <p style="text-align: center;">Vicfish Ltd (Bukoba)</p>	Kerebe (Island) ^(a) : ~ 2,600	Nyaburo (Island): 2,400/2,500
	Nyamkazi (landing site near Vicfish factory): 2,900/3,000	Mashanga (remote landing site on mainland): 2,000
	Kerebe: ~ 2,700	Mashanga: ~ 2,500
	Nyamkazi: ~ 3,500	Nyamkazi: ~ 3,300
	Chilled and frozen fillets exported overseas ^(b)	Chilled and frozen fillets exported overseas
	Processed by-products consumed locally / regionally	Processed by-products consumed locally / regionally

NB: (a) Kerebe has been used as an example of an island belonging to the project area with an eco-labelled BMU (Beach Management Unit).
(b) Management of Vicfish Bukoba were not in a position to provide price information on products sold.

Compared to most other sectors of the economy, fishers can earn substantial amounts of income, although this also depends on the season. For example, assuming the crew (2 – 3 people) of a motorised boat can catch 150 kg of Nile perch in one night (high season), the value of the catch will be approximately Tshs 300,000 – 450,000, depending on the location of the BMU and whether or not the fish is eco-labelled. Operating costs (about Tshs 80,000 for a motorised boat, and Tshs 30,000 for a non-motorised boat) will be deducted from this amount, and the net income will be shared as follows: 40% for the fishing crew, and 60% for the boat owner.

The daily catches are substantially lower during off-season and are estimated to be approximately 40 kg per motorised boat and 20 kg per non-motorised boat. According to stakeholders interviewed the price difference between high season and low season is relatively small (i.e. about Tshs 200/kg).



Plate 3: Nile perch handling at Nyaburo island landing site



Plate 4: Mashanga landing site – BMU Secretary

Credit requirements and sources

Nile perch fishery

Fishers, collectors, and suppliers working in the Nile perch fishery on Lake Victoria have two types of capital requirement:

- (a) Costs of boats, including gear and engines;
- (b) Working capital.

Fishermen/boat owners have the following capital requirements:

- A new boat with engine (about 10 – 15 hp) would cost about Tshs 8 – 10 million (USD 5,330 – USD 6,670). In particular, nets (50 – 70) and the engine are the main cost elements. The boats are mostly made of wood, which appears readily available. Some boat owners have their own small forest plots and therefore only have to pay for labour to construct a boat.
- A small boat without engine may cost on average about Tshs 1.2 to 1.5 million (USD 800 - 1000) including 25 nets. A fisher based at a relatively remote landing site such as Mashanga may require Tshs 2.5 – 3 million (USD 1,667 - 2,000) to obtain a larger, non-motorised boat plus 40 fishing nets.
- Working capital for fishing is less of an issue, in that it mainly involves items such as fuel, ice, maintenance of gear, and food for fishermen. Given that the catch will be sold very soon after capture, proceeds will be turned over within a short period of time. As a result, working capital of Tshs 100,000 – 200,000 (about USD 100) should be sufficient for the fishing crew of one boat. One larger supplier based in Nyamkazi, who owns 14 boats said he needs an operating capital of Tshs 4.4 million per week (USD 2,933). In addition to the fish caught with his own boats, he also buys and sells other Nile perch (always eco-labelled).

Within the Nile perch value chain, it is in particular collectors and suppliers who require large amounts of working capital to buy and sell fish. This is in addition to capital costs for the boats and gear.

This is illustrated by the fact that Vicfish Bukoba has provided interest free loans to eco-labelled fish suppliers, totalling Tshs 268 million (USD 179,000) in the form of cheques or cash, plus Tshs 250 million (USD 167,000) for equipment and gear (i.e. engines and nets).

According to Vicfish, as at November 2010, 11 suppliers have obtained credit in the form of cheque or cash (i.e. average of USD 16,242) and 15 suppliers have obtained credit for engines and nets (i.e. average of USD 11,115). The largest cheque/cash loan is Tshs 100 million (USD 66,667) and the smallest Tshs 3 million (USD 2,000). The majority of suppliers have cheque/cash loans worth between Tshs 3 million and 10 million. As for loans for engines and nets, these are well spread between Tshs 2.6 million (USD 1,733) and 32.6 million (USD 21,700).

In the presence of Vicfish staff suppliers stated that their loans were interest free and they obtain market prices for their fish. At the same time, according to other stakeholders met in Bukoba, some suppliers seem to complain that loan conditions are tough (e.g. prices obtained are below market prices after all). When discussing these issues, Vicfish management in Mwanza made it clear that whilst they are not a

charity, the company has an interest that their suppliers survive. The reimbursement of loans is flexible, and monthly targets are based on catches.

Some boat owners may use several credit sources (e.g. Tshs 4 million from Vicfish for gear, and Tshs 3 million from NMB for operating capital). For example, the supplier based at Nyamkazi landing site who obtained the loan from the National Microfinance Bank (NMB) worked until 2004 as a supervisor for a fish supplier until he had enough equity to buy two small boats. Now he has 12 small boats (using hooks and line). He has his third loan from NMB, the first one being of the order of Tshs 1 million, and the current one being Tshs 3 million. The introduction through the village leaders was sufficient to obtain the loan. Only NMB loans which are above Tshs 5 million require collateral.

Besides a few, larger-scale suppliers, it seems common that SME type boat owners have started their business with their own funds and worked their way up. For example, several boat owners met during the course of the survey have indicated that they started in the 1990s with a relatively small amount of money (e.g. from agricultural production or from inheritance), and now own several boats (e.g. 6 or more motorised or non-motorised boats). For example, one boat owner on Nyaburo Island has started around 1990 with Tshs 100,000 which he used as a revolving fund for fish trading. Five years later, once he had accumulated Tshs 0.5 million he borrowed Tshs 0.3 million from relatives and bought a small engine (5 HP) for a boat. Given that he has a plot of land and trees on the mainland, he could use his own wood and only had to pay for construction of the boat.

Only few fishermen have obtained loans from micro-finance institutions or NGOs such as PRIDE. For example, two fishers/boat owners encountered during the survey in Nyaburo have obtained loans from PRIDE. One has now a loan of Tshs 0.8 million, and the other one worth Tshs 2 million (for which he has to pay back Tshs 2.5 million over 10 – 12 months; i.e. Tshs 50,000 – 60,000 per week). The loans seem for various business such as fishing activities, running of a tea room, and guest house.

It is understood that out of a group of about 30 discussants met on Nyaburo Island, 10 (9 males and 1 female) have sent applications for credit to PRIDE. The first loan that can be obtained by an applicant is of the order of Tshs 0.2 million. Once the first loan has been reimbursed the next loan can be higher. As for the virtues of group lending, the picture was mixed. For example, some fishers encountered prefer individual loans, likely as a result of past problems (e.g. group members moving away). It was stated that in order to obtain an individual loan one must have a permanent address on the island or on the mainland, although the loan can only be obtained on the mainland. Mobile banking does not exist on the lake (at least not in this region) due to security issues.

Relatives and friends can lend money, however the amounts that can be borrowed are usually below Tshs 1 million (USD 667) and have to be paid back over a short period of time. Answers regarding the amount of interest to be paid vary in that some villagers stated that no interest has to be paid whilst others said that this could be about 20% p.a. (e.g. for a loan of Tshs 100,000 which has to be paid back within one year).

Although the majority of fishers and boat owners like the idea of having access to credit facilities, they also report that people might still feel “shy” applying for credit. Most likely, this is the result of not being familiar with the procedures, and also fishers not having a good reputation as far as credit reimbursement is concerned.

At the same time, the question has to be asked how credit will be used in fishing communities dominated by SME type fishermen and boat owners. Given the current abundance of boats and the fact that Nile perch stock levels have declined during the last few years, it is questionable whether additional credit facilities for the purchase of boats and gear should be a priority.

Small-scale traders and processors

The small-scale fish traders and processors encountered during the course of the survey were mostly female. Whilst some process (e.g. dry) *Dagaa* on islands, others buy and sell small quantities of Nile perch near Bukoba town.

For example, women processors/traders on Nyaburo island stated that they require each about Tshs 300,000 – 500,000 (USD 200 – 333) for buying and selling *dagaa*. It could be observed that drying facilities for the latter are not appropriate in that the bulk of the fish is dried on the ground (i.e. grass or rocks). It was reported that drying racks or platforms, which have been recommended, are too expensive.

Three women fish traders encountered on the outskirts of Bukoba town (near Nyamkazi landing site), stated that they would buy Nile perch worth Tshs 70,000 (USD 47) per day during the season when fish is more abundant (December to March), and make Tshs 15,000 – 20,000 profit. During the low season, they would trade fish worth Tshs 30,000 – 50,000 per day, and make a profit of Tshs 5,000 – 15,000. The women will cut the fish and sell it fresh in smaller pieces, or fry it and sell it as ready-to-eat food.

Most of the female traders/processors appear to belong to informal ROSCAs (Rotating Savings and Credit Associations) consisting of groups of 10 – 20 women. For example, the ones met near Bukoba town each contribute Tshs 10,000 per month, and, given that their group has 20 members, each month one of them gets a loan of Tshs 200,000 (USD 133).

Small-scale aquaculture producers

According to the website of the FAO Fisheries and Aquaculture Department, aquaculture in the United Republic of Tanzania has a vast but as yet untapped potential.² It is estimated that 14,100 ponds of an average size of 150 m² exist in Tanzania, in particular in Ruvuma (4 942), Iringa (3 137), Mbeya (1 176) and Kilimanjaro (1 660) regions.³ Based on these figures it is assumed that the total production is of the order of 1,523 tonnes from 212 hectares of ponds (i.e. 7.2 tonnes per hectare). Tilapia is the dominant species used in fish farming in Tanzania. In addition, there is a rainbow trout farm (25m x 25m in size) near Arusha, producing 7 tonnes in 2004.

Similarly to the national picture, aquaculture production is at a very early stage in Kagera region. It was indicated that there are currently about 200 small-scale aquaculture producers in the region. Main challenges faced by aquaculture in the region include lack of skills by the local population in pond aquaculture, and lack of start-up capital.

² http://www.fao.org/fishery/countrysector/naso_tanzania/en#tcNB0052

³ NB. The data presented on this FAO website may be a few years out of date.

The majority of ponds are very small-scale, i.e. 100 – 200 m² per pond. At the same time, large-scale investors such as Vicfish Ltd apparently have acquired in excess of 100 hectares of land for aquaculture production.

As for credit needs it was reported that a new pond measuring 100 m² would cost up to Tshs 0.5 million (USD 333) to construct and stock (e.g. with tilapia). The ponds are about one meter deep. According to the regional officer in charge of aquaculture, the recommended stocking density of tilapia is 4 fingerlings per m². It takes a minimum of 6 months until the fish can be harvested.

At present, there seems to be a ready local market for fish from aquaculture production. At the same time, some local producers apparently hope to export tilapia if it is produced in larger quantities. However, this would require a change of regulations in that currently only Nile perch is allowed to be exported.



Plate 5: Small-scale aquaculture ponds near Bukoba town

Savings potential

Fishing communities around Lake Victoria have a reputation for being relatively cash rich, but not always spending the money very wisely. In particular, on islands but also in settlements near more remote landing sites on the mainland there seems to be an acute lack of services (e.g. schools, health centres, housing).

Nonetheless, quite a few individuals encountered at landing sites seem to have bank accounts with different banks or MFIs. For example, on Nyaburo island, out of a group of around 30 people, 12 had accounts – i.e. with NMB (7), PRIDE (3), NBC (1), and CRDB (1). FINCA was also mentioned although it was not possible to ascertain how many individuals (i.e. mostly women) have an account there.

The fact that quite a few individuals on Nyaburo island have bank accounts seems to be due to the relatively easy access to the mainland (about one hour boat ride), given that the accounts have to be opened and maintained there.

A remote landing site like Mashanga (on mainland, 2.5 hours boat ride from Bukoba) presents a somewhat different picture in that whilst village leaders have opened a bank account with NMB, according to the local leaders the account has been closed due to procedural problems. They don't understand the reason for this and they cannot access the amount deposited (Tshs 3.2 million). At the same time, transport costs are high to get to Bukoba town to sort out the problem.

Nonetheless, the members of Mashanga community are active in different informal savings and credit groups. Apparently, there are about 10 savings groups, which are registered at the District HQ (i.e. groups have certificates). On average, one group has 20 members (some mixed, some women only). For example, one women savings and credit group has an arrangement whereby each member contributes Tshs 1000 – 10,000 per week (every Monday). The money is not kept at a bank but at the Treasurer's home. Group members can obtain loans of Tshs 50,000 – 300,000, which they have to reimburse after three months. The monthly interest rate is about 2% (e.g. Tshs 6,000 interest on a loan of Tshs 100,000 after three months).

NGOs such as Red Cross and World Vision are active in the area, in that they train the villagers in book keeping and running of small (i.e. micro) enterprises. For example, World Vision trained women in making cakes from cassava or sweet potato.

As for the savings capacity of fishers, this depends on the scale of the business. For example, whilst fishers in Nyaburo may be able to save Tshs 50,000 per month, collectors and boat owners may be able to save Tshs 0.5 million per month (USD 333). As a result, fishers may have a few hundred thousand shillings in the bank, whilst bigger players at the landing sites may have Tshs 10 million.

As for savings potential in Mashanga community, the following figures were provided as examples:

- A fish collector can save up to Tshs 75,000 per week;
- A fisherman can save up to Tshs 20,000 per week;
- A lady who owns a small hotel near the landing site can save Tshs 7,000 – 10,000 per week.

Two fishermen encountered at the Nyamkazi landing site near the Vicfish factory in Bukoba stated that they don't have a savings account but are members of a savings club (8 men, 2 women). They contribute Tshs 7,000 per week, although they could

save a lot more (i.e. Tshs 7,000/day after expenses are deducted). The money is used for family matters and small businesses (e.g. kiosks).

3 women fish traders met near Nyamkazi do not seem to be keen on having their own savings accounts in that interest rates on savings accounts are low (“the money doesn’t increase”), and one woman trader stated that having an account on her own could complicate family life in that the husband might think she has a lot of money and would leave all the expenses to her. Out of the 3 fish traders only one has a joint account with her husband. The fact that the three traders have good business opportunities in Bukoba town might explain why they are not keen on saving accounts but prefer to invest the money in their small businesses or spend it on family matters. One woman stated that she can save Tshs 300,000 – 400,000/month from trading, which she can use for family problems (e.g. school fees or uniforms).

Mobile phone banking as a means of transferring money appears on the increase but those who want to draw cash need to travel to town, which can be costly or time-consuming. As a result, a wider network servicing islands and remote communities is required.

As a consequence of security concerns, there seems to be little or no scope for mobile banking in fishing communities.

Insurance services

No insurance services have been encountered in the fisheries sector. This is not surprising given the riskiness of the business, and also the fact that the country’s insurance industry is still young and concentrating on mainstream business.

For example, bank managers stated that the only type of insurance they might broker is related to assets such as buildings or vehicles.

Annex 4 provides some information on international experiences with aquaculture insurance schemes and in the Vietnam context.

Financial institutions in Bukoba

A range of institutions dealing with financial products has been visited in Bukoba, including:

- Banks (KFCB, CRDB),
- Micro-finance institutions (NMB), and
- NGOs (PRIDE and KADETFU).

The following sections provide a brief overview of these institutions and some key characteristics. It should be noted that due to the brief nature of the fieldwork, it was not possible to provide a complete overview of Kagera region's banking and microfinance system.

In addition to information collected during the field survey in 2010, the section also draws on the report by Broadbent (2008).

KFCB (Kagera Farmers Cooperative Bank) was established in Bukoba in 2002 as a community bank, although they now have full registration as a commercial bank (Broadbent, 2008). Around 30 SACCOs are members of the bank. It has more than 10,000 customers. As at November 2010, KFCB has a loan portfolio of Tshs 3 billion (USD 2 million), and deposits of Tshs 3.8 billion. The loan portfolio includes traders (48% of portfolio), manufacturers (11%), and agriculture (11-12%).

Amongst members of the fishing community it is only a few big suppliers who have their accounts with KFCB. One had a loan of Tshs 30 million, which he has paid back. Only one *dagaa* trader currently has a relatively small, outstanding loan.

No fishermen as such have loans with KFCB. Some may have savings accounts but these do not seem to specify the economic sector of the account holder. Problems highlighted regarding loans to fishermen, include that they do not have a stable situation as far as their settlements and property are concerned. The fact that fishermen sometimes migrate is likely to make it difficult to trace their property – i.e. thereby reducing its value as collateral.

As yet, no aquaculture producers have loans with KFCB. At the same time, KFCB recognises the potential of aquaculture and expressed interest in the sector.

Regarding loans to the agricultural sector, it was stated that these can be “challenging”. For example, the fact that there is hardly any irrigation used in the sector makes production and loans more risky.

At the same time, KFCB are in charge of a Tshs 600 million (USD 400,000) revolving fund, which forms part of the Agricultural Inputs Trust Fund. Disbursement of loans is according to needs (strictly for farming only), and interest rates to be paid by farmers are 10%, compared to commercial interest rates of 18% - 24%. The default rate on these agricultural input loans is of the order of 26% – 27%.

CRDB Bank Plc is a leading private commercial bank in Tanzania. The Bank was established in 1996 and was listed on the Dar es Salaam Stock Exchange in June 2009. CRDB Bank offers a comprehensive range of corporate, retail, business, treasury, premier, and wholesale microfinance services through a network of 60 branches (www.crdb.com). The Bank also operates through internet and mobile banking services.

CRDB provides loans to SMEs which fall in the range of Tshs 1 million to 300 million (USD 667 – USD 200,000). Loan amounts higher than this are considered large-scale and below micro-scale. Loan applicants are required to prepare a business plan showing expected cash flow and pay-back period.

The bank has experience with the handling of trust funds, which tend to have fixed interest rates below the commercial rates, and where the fund holder (e.g. Government office) guarantees to cover part (e.g. 60%) or the totality of losses. Trust funds are usually channelled through SACCOs (minimum 100 members), which then disburse the loans to individuals.

As for the challenges of providing financial services to the fisheries sector, around the year 2000 about 10 – 15 fishermen had been given overdrafts or loans by the Mwanza branch of CRDB. It appears most of their businesses did not do well (e.g. money was invested in wrong type of business). As a result, they could not reimburse the money, and in some cases property of the fishermen was sold.

NMB (National Microfinance Bank). As the name suggests, NMB targets the lower income market (Broadbent, 2008). NMB provides loans to both MSEs (micro and small-scale enterprises) and SMEs (small and medium-size enterprises). Loans for MSEs can go up to Tshs 7.5 million (USD 5,000), whilst loans for SMEs are above, and can reach Tshs 40 million or more.

Apparently quite a few fish traders (i.e. more than 30, many female), who are based in Bukoba, have MSE type loans with NMB. It is likely that these loans have been categorised under trading enterprises, and not fisheries related businesses.

Fishermen do not have loans with the bank. For example, management of the local NMB branch feels that they are difficult to trace. Nonetheless, boat owners who have property (e.g. house or land) would be able to get a loan, provided they have title deeds which can be used as collateral.

NMB interest rates on loans are 24% p.a., whilst savings rates are 3%. It was stated that “banks are a safe place to keep the money but not to generate income”.

As for the aforementioned problems encountered by villagers in Mashanga, it was explained that the latter most likely had not followed the procedures, as a result of which their account was closed. For example, if the account is dormant (i.e. not used for six months) it will be automatically closed. Also, there will be monthly maintenance fees deducted from the account (Tshs 500/month) which could result in a bank account slipping into the “red”, which again would lead to its closure.

It appears as if customers from relatively remote communities are disadvantaged in that they face difficulties to follow the necessary procedures. Nonetheless, as indicated above, community members on less remote islands such as Nyaburo (about one hour boat ride from Bukoba) do not have problems with their accounts with NMB.

KADETFU (Kagera Development and Credit Revolving Fund), who operate in Bukoba and Muleba Districts, was established in 1993 and has been funded by CORDAID since 2004 through the “Economic Empowerment for Fishermen through Environmental Conservation” project (Broadbent, 2008). The project had a revolving fund of the size of USD 100,000. For example, as part of the project which ended in 2009, KADETFU would lend to savings and credit groups up to Tshs 5 million for the

purchase of fishing gear, and then it was a up to the groups to decide whether to give the entire amount to one member, rotating it, or whether the loan was shared between the members (Broadbent, *ibid*).

As a result of the low repayment rate (i.e. about 40%), KADETFU are still trying to get money back for the revolving fund. Challenges encountered during the implementation of the project include: declining stocks lead to declining repayment rates, attitudes of fisherfolk towards training (“attitudes don’t change”, also towards HIV/AIDS).

The organization has recently started to work with aquaculture producers. Having started to work with 2 fish farmers, as at November 2010 they work with 17, and are planning to work with 40 by the end of 2011. According to them, there is a high demand for services related to fish farming. There will be a new CORDAID funded project, which will start in January 2011, which has elements of capacity building and market access. One staff member of KADETFU is currently being trained in fish farming in Uganda. It was indicated that market access is important in that most investors in fish farming want to export. At the same time, changes in regulations would be required in this context as Nile perch is currently the only fish species that is allowed to be exported (also see above).

PRIDE (Promotion of Rural Initiatives and Development Enterprises) is an NGO whose main activity is microfinance (Broadbent, 2008). PRIDE is not a bank and therefore people cannot have savings accounts with them.

PRIDE uses a group lending model, whereby individuals have to belong to a small group of up to five members. Usually, a bigger group called MEG (Marketing and Enterprise Group) is formed out of 10 small groups. Loans will be given to individuals, however the group is the guarantor. In order to obtain credit, a collateral in the form of savings (12.5% - 25% of loan value) will be required from the loan applicant. As a result, PRIDE encourages savings for collateral, however not as a bank.

Some PRIDE clients stated that, as part of an MEG, they will be put together with people they do not know, which can pose a problem if these group members are unreliable.

PRIDE management found it difficult to say how many fishers or other members of fishing communities have loans with PRIDE in that customers are not classified according their business background. Two men belonging to the fishing community in Nyaburo were encountered who have obtained loans with the NGO (see above). As part of a MEG, individuals can obtain loans from Tshs 0.2 million – Tshs 2 million.

Table 3 provides an overview of financial services provided and obtained by different participants in the Nile perch value chain of Bukoba, plus issues and challenges.

Table 3:
Overview of financial services in the Nile perch fisheries value chain

Stages in the Export Value Chain	Financial Services Used and Provided	Issues and Challenges
<p style="text-align: center;">Vicfish Ltd (Bukoba)</p>  <p style="text-align: center;">Suppliers</p>  <p style="text-align: center;">Small-scale boat owners / Fishermen (Boat crews) / and traders</p>	<p>As a large-scale enterprise, processing factories such as Vicfish have equity, and access to bank credit. They provide reliable suppliers with substantial loans for working capital (in cash) or for gear (nets, engine). As a result, these suppliers are able to operate relatively large numbers of boats (e.g. often in excess of ten).</p>	<p>Companies like Vicfish are confronted with the wider challenges in the international fish and seafood market, including declining turn-over and price competition from Vietnamese pangasius. In the long-term, a lot will depend on the success of the eco-labelling project and the extent to which it is helping to stabilise stocks.</p>
	<p>Suppliers play an important role in the value chain in that they assemble relatively large quantities of fish before it reaches the Vicfish factory. They have access to different sources of capital, including equity (e.g. from inheritance or other business), loans from Vicfish, and loans from banks, since they can provide collateral. Equally, they have easy access to other financial services such as savings schemes and mobile phone banking.</p>	<p>It appears, following sensitisation as part of the eco-labelling project, suppliers are realising that their long-term survival as a business will be jeopardised if Nile perch catches further decline. As a result, they reportedly pay increasing attention that stock protection measures are respected.</p> <p>Given the relative abundance of fishing boats on Lake Victoria, it may be opportune to focus a financial services project on the aquaculture sector.</p>
	<p>Boat owners who are not registered suppliers of Vicfish have often worked their way up starting with a relatively modest amount of equity. They may have started their business as traders before purchasing boats, and becoming collectors. Fishing crew (i.e. 2 – 3 fishermen per boat) can earn substantial amounts of income, in particular during the main fishing season (Dec – March). The issue is management of financial resources, in particular savings. Some fishers and small-scale traders and processors have savings accounts or are members of informal savings and credit clubs (ROSCAs).</p>	<p>Several measures are required to improve financial services for small-scale boat owners, and fishermen, as well as small-scale traders or processors, who are often women. These include: (a) better access to savings services provided by banks and MFIs. In particular, remote communities which have difficulties to reach Bukoba are disadvantaged. (b) The need for education in financial management has been stressed numerous times. Whilst some fishers are clearly saving and progressing in their businesses, others are still lagging behind.(c) Mobile phone banking appears on the increase but those who want to draw cash need to go to town. As a result, a wider network servicing islands and remote communities is required.</p>

Annex 1: People and organisations met in Tanzania

Date	Name/Position	Organization	Location
3 & 4 Nov 2010	Travel by air from London, via Amsterdam, Dar es Salaam, and Mwanza to Bukoba, arrival on 4 November pm.		
5 Nov 2010	Mr Nurdin Salim, Manager, Bukoba Branch; Mr Sunil, Quality Manager; Mr Yunus; Landing Site Supervisor	Vicfish Ltd; Fish processing factory, Bukoba Branch	Bukoba
5 Nov 2010	Mr Rodrick Mahimbali, Regional Coordinator of MCS activities; Ms Monica Kishe, Regional Fish Quality Control and Standards officer in-charge.	Fisheries Administration of Kagera Region; Ministry of Livestock Development and Fisheries (MLDF)	Bukoba
5 Nov 2010	Mr Yusto Paradius Muchuruza, Executive Director	Kagera Development and Credit Revolving Fund (KADETFU)	Bukoba
5 Nov 2010	Mr Sylvester R. Katemana, General Manager	Kagera Farmers Co-op Bank Ltd (KFCB Ltd)	Bukoba
6 Nov 2010	Meeting with Head of Village, BMU Chairman, and about 10 other male and female community members	Beach Management Unit (BMU)/ Landing Site	Nyaburo Island
8 Nov 2010	Meeting with BMU Manager, 2 fish suppliers, 2 fishermen, and 2 fish traders/processors (women)	Beach Management Unit (BMU)/ Landing Site	Nyamkazi, outskirts of Bukoba Town, near Vicfish factory
8 Nov 2010	Mr Emmanuel H Chaburuma, Branch Manager	CRDB Bank Plc	Bukoba
8 Nov 2010	Mr Eric Kiiza, Regional Aquaculture Officer	Regional Government Administration, Kagera Region	Bukoba
9 Nov 2010	Meeting with Head of Village, BMU Chairman, and about 10 fishermen and boat owners	Beach Management Unit (BMU)/ Landing Site	Mashanga, Bukoba Rural District
10 Nov 2010	Mr Sunil, Quality Manager; Mr Yunus, Landing Site Supervisor; Mr B.G. Nagaraj, Production Manager	Vicfish Ltd; Fish processing factory, Bukoba Branch	Bukoba
10 Nov 2010	Mr Bwire, Acting Branch Manager	National Microfinance Bank (NMB), Bukoba Branch	Bukoba
10 Nov	Mr Emmanuel Gabriel, Acting Districts Fisheries Officer	District Administration	Bukoba Rural District
10 Nov 2010	Mr Emmanuel Usaka	PRIDE (Microfinance NGO) Bukoba Branch	Bukoba
11 Nov 2010	Flight by U Kleih from Bukoba to Mwanza		

11 Nov 2010	Mr Tiwari, Coordinator of Eco-labelling Project	Vicfish Ltd	Mwanza
11 Nov 2010	Travel by air to London, via Dar es Salaam and Amsterdam, Arrival on 12 Nov 2010 pm.		

NB. All visits to landing sites, banks, and NGOs have been undertaken jointly by U Kleih, M Kishe and K B Yunus.

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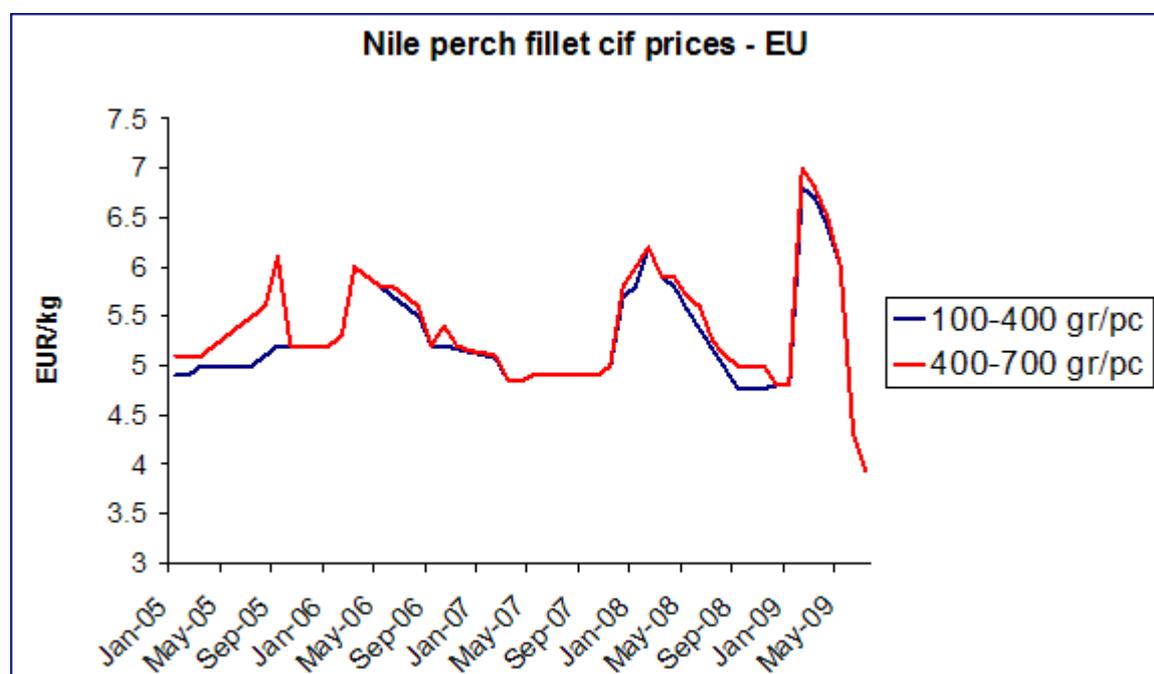
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Annex 3: Nile perch fillet prices (cif) - EU



Source: FAO Globefish 2009 (Nile Perch – August 2009)

Annex 4: Aquaculture insurance – Findings from Vietnam case study

The global aquaculture insurance market has increased considerably since the mid-1970s; the premium paid by aquaculture producers has grown from around US\$100,000 in 1974 to an estimated USD 50 million in 2002 (AUMS, 2003; quoted in van Anrooy et al, 2006).

According to van Anrooy et al (2006), the benefits of aquaculture stock mortality insurance to producers can be large. Amongst others, aquaculture insurance should provide the following benefits:

- some "peace of mind";
- protection against a variety of natural hazards beyond their control, which affect their health and personal security, assets and harvests;
- basic compensation for the loss of harvests;
- more secure incomes, greater stability and social and economic welfare in the farming community;
- improved access to investment capital and to formal credit, by reducing the risk of non-payment of loans for the lending financial institutions.
- increased incentives to invest in the development of their farms and the adoption of new technologies;
- improved market supply quality, consistency and reliability;
- increased opportunities for mutual assistance and cooperation among aquaculturists;
- access to additional sources of information on risk management.

According to Hotta (1999) the combination of large investments in fisheries and aquaculture in Vietnam and the risky nature of the business justify the establishment of adequate insurance systems for the fisheries sector. However, when the study was produced in the late 1990s, the constraints appeared to be the level of efficiency of the programmes and inadequate institutional networks of the system. In addition, the fishermen and fish-farmers generally lacked any understanding of, or familiarity with, insurance principles and benefits. At the same time, staff of insurance companies were not familiar with the fisheries sector and did not understand its specific needs. However, according to the same source (Hotta, 1999), there were plans to establish a pilot project for aquaculture insurance in Nghe An Province.

According to Roberts (2005), a pilot insurance programme for aquaculture enterprises was offered by a local subsidiary of the large French insurer, Groupama, in 15 of Vietnam's Mekong River delta provinces. However, after two years, the scheme was discontinued, with a loss ratio of nearly 2. (Roberts, 2005). Also, during the field survey in October 2010 it was reported that Bao Minh has provided aquaculture insurance, which was equally discontinued (see below).

Vietnam's insurance industry has only recently begun expanding, and a series of policy and market changes have taken place over the past few years fostered by increased competition. Starting from a very low base, growth rates of mainly life insurance are high. While microinsurance products are under-developed in the young industry in Vietnam, the Government is providing social insurance and low-cost medical insurance to low-income households. It is to note that several life, agricultural (crop, livestock) and accident insurance products are being/have been

piloted in collaborations between JSBs, MFPs and the insurance industry (DFC et al, 2007).

It appears, the demand for insurance services among BOP households, including agricultural insurance, is potentially huge and largely unmet. On the demand-side, awareness is low and perceived pricing of premiums is higher than actual costs. On the supply-side, the potential size and profitability of the BOP market segment is not fully recognized and the process of designing and testing cost-effective services and delivery systems accessible to BOP has only recently begun. According to DFC et al (2007), examples of rural/agricultural insurance schemes include the following:

- Groupama provides livestock insurance in Can Tho, but has faced significant difficulties with the profitability of the product and is trying to diversify its activities beyond agricultural insurance;
- Bao Viet tried rice crop insurance in the past and was not very successful, but it still offers industrial crop insurance (for cashew nuts and coffee, for example);
- GRET in Vinh Phuc has developed a livestock insurance scheme for pig farmers, insuring porkers and sows against 4 common deceases and providing free veterinary advise against a small premium.

It is assumed that the vast majority of the rural farming households would also benefit significantly from access to appropriate micro-insurance services, including in particular medical, life, property, livestock and crop (price index) insurances. Microinsurance products are not simply downscaled conventional insurance products where “one product fits all”. Microinsurance is a subset of insurance that provides financial protection to the poor for certain risks in a way that reflects their cash constraints and coverage requirements. (DFC et al, 2007).