

Financial Services for SME Aquaculture and Fisheries Producers

Ghana Case study

February 2011

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**This report is an output from a project funded by the German Agency for
Technical Cooperation (GTZ) for the benefit of developing countries.
The views expressed here are not necessarily those of GTZ**

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Summary

The fisheries sector in Ghana is a key contributor to gross domestic product, export income, people's diet and food security. Most of the catch comes from marine fisheries (400,000 tonnes annually) followed by inland waters (40,000 tonnes) and aquaculture (5,000 tonnes). However, a growing population and declining national catch has meant that imports, currently running at approximately 430,000 tonnes (mostly of low quality fish), account for nearly 50% of national consumption. The quality and size of the Ghanaian capture sector has been declining over the last decade and therefore the only opportunity for import substitution would appear to be the aquaculture sector, although significant technical and financial challenges have to be addressed if this sector is to grow from its current low level.

Artisanal marine fisheries (landing 70% of total catch) has a relatively high set-up cost of approximately 28,000 US \$ for canoes, outboard motor and nets in Tema and 47,000 US \$ in Cape Coast. Running costs are required for fuel, food and crew wages. Inland fisheries require lower capital costs of approximately 9,500 US \$ for canoe, motor and nets. Records are rarely kept and it was difficult to obtain authoritative macro-level data for the total catch (particularly inland fisheries) and more micro-level level information on the returns to capital achieved by the fishermen, although they reported that it produced a good living and was more than enough to cover their basic needs.

Aquaculture capital costs are more variable than for marine fisheries, due to nature (e.g. ponds versus cages) and size of the venture. One small- to medium-sized venture reported costs of construction of 20,000 US \$ for six ponds of each 0.2 ha. Also, running costs can be higher and include the purchase of fingerlings (0.6 US cents each), annual water charges (typically 500 US \$) and good quality imported feed (27 US\$ per 25 kg bag) to maximize yields. Excluding the annual cost of capital, one farmer estimated that producing 10,000 kg of fresh fish would cost 27,000 US \$ to yield a revenue of 33,000 US \$. However, as with the capture sector, lack of accurate record keeping is an issue.

It can be seen that all types of fishing activities require a considerable amount of capital and variable expenditure. In capture fisheries, accessing funds is mostly undertaken through informal arrangements in which women traders are the key financiers for both capital and running costs. Women traders will use their own savings or secure loans from banks such as the Agricultural Development Bank (ADB) or the private sector institutions such as the Prudential Bank, who see women traders as a lower risk and more capable of managing finances than the fishermen. The informal loan arrangements provided by women traders mean that fisherman are obliged to sell their catch to the women until the loan has been repaid. No information was available to gauge the repayment terms and conditions, and how this translates to a monetary value in order to judge its competitiveness with the formal credit sector.

Credit organisations such as the ADB have provided loans directly to fisherman when they have been able to provide collateral (such as titled land deeds), references, third-party guarantor and clear evidence of a viable business (records of catch and sales). From the fishermen's perspective, the procedures were said to take a long time which has discouraged them from taking the formal route.

In the aquaculture sector, the interviewed SMEs had used their own funds generated from other business ventures although they sometimes used a bank overdraft facility to purchase feed in bulk. Women traders were important to them in terms of marketing their fish but even here there were moves to process their own catch and sell directly to retail and other outlets.

In assessing the provision of financing, the following opportunities and challenges were identified:

- More in-depth studies are required to understand the full costs to fishermen of using informal loans, notwithstanding the key role that women traders play in providing financial services and managing the risk in this sector;
- Capacity strengthening to improve the ability of fishermen to keep records and to make them aware of the advantages of using formal banking systems would increase their opportunities to make use of more formal credit systems;
- Aquaculture appears to offer more opportunities for growth compared to the capture fisheries sector which is suffering from declining stocks and relatively large number of players;
- Lack of technical capacity appears problematic at all levels in the aquaculture sector, particularly in managing fingerling stocks and optimising feed rates and stock density – the later is crucial in maximising returns on capital and variable expenditure;
- Increase resources are required to support the advisory services in providing advice to all fisheries sectors – this does not necessarily have to be solely through Government funding since a profitable fishing sector should be able to play a bigger role in resourcing and managing this support.

Methodology

This GTZ-funded case study “Financial services for SME aquaculture and fisheries producers in Ghana” 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), and for the New Partnership for Africa’s Development (NEPAD).

The objective of the assignment is to prepare an evaluation of how Ghanaian small to medium enterprises involved in the fisheries and aquaculture sector meet their financial needs, both in establishing their businesses (investment) and in running them (cash flow).

A field survey for this case study was undertaken from 31st January to 4th February 2011. A checklist/questionnaire approach was used to gather information covering key aspects of the sector as outline in Appendix 1. A range of stakeholders in the fisheries sector were interviewed either as individuals or in group discussions (see Appendix 2 for itinerary and people met).

Background to the fisheries sector

The fisheries sector is important to Ghana because it:

- contributes significantly to the country’s gross domestic product (between 3 and 4.5%) and produces exports of US\$ 80 billion;
- provides employment and livelihood opportunities for between 1.5 and 2.2 million people out of population of 24 million; and
- is a key part of the Ghanaian diet (fish make up between 22 and 25% of household food expenditure) and supplies 65% of the country’s protein.

There is a high demand for fish: average per capita consumption is 20-25 kg, above the global average of 16 kg. The country consumes annually approximately 880,000 tonnes of fish of which 442,000 tonnes is caught in Ghana’s waters from which about 50,000 tonnes of high value fish is exported. Imports are dominated by relatively cheap small frozen pelagic, which have lower unit value than exports. Imports of tilapia have been outlawed to protect the local industry.

Ghana’s fishing sector can be divided into three sub-sectors: marine capture, inland capture and aquaculture.

Marine fisheries

The current recorded capture from marine waters is around 400,000 tonnes, a decline from mid-1990s totals of 500,000 tonnes. This subsector has an industrial fishing fleet which exploits pelagic and demersal fishery resources up to 200 nautical miles (i.e. the Exclusive Economic Zone) and semi-industrial fishing which trawls in shallow waters.

The small-scale artisanal fishing sub-sector is based on between 10-12,000 wooden canoes mostly powered by outboard motors, which land 70% of Ghana's fish production.

Inland fisheries

Most of the inland fisheries are centred on the Volta Lake (which produces 20% of the country's catch) and eight smaller river systems, lagoons and estuaries that are estimated to produce a further 10 to 15% of the catch, although little is recorded outside of the Lake. On the Lake, there are fishermen and women that fish from canoes which are mostly built from wooden planks, with some constructed from single tree dugouts. The volume of fish landed has not decreased but the size of the fish is getting smaller.

Aquaculture

Fish farming takes place in earthen ponds, cages, brush parks and 'dugouts'. By far the most common methods of farming is with ponds, with the majority of ponds occupying less than 0.5 ha, with a median of only 0.06 ha (Asmah, 2008). Data from the Fisheries Commission for 2009 show that cages produced 4,912 tonnes compared to 864 tonnes from ponds and 1,377 tonnes from the other sources. Two companies, Tropo Farms and West African Fish Ltd produced 3,500 and 1,000 tones, respectively. Aquaculture sector is expanding, more so for caged fisheries than ponds.

Trading

In all three sub-sectors, trading is predominantly undertaken by women who act as key intermediaries in the trade of fresh fish, and in the processing and subsequent sale of smoked and salted fish. In addition to trading, women play a pivotal role in the sector through their financing activities which are discussed further below.

Economics and finance of the fisheries sector

Marine fisheries: fishermen's perspective

Tema:

A group meeting with four artisanal fishermen at the Fisherman's Harbour in Tema, revealed the following capital cost structure:

- Traditional wood canoe using tree manufactured in the forest area of the country and finished off in Tema costs 8,000 US \$ (12,000 cedis¹);
- 40 hp Japanese outboard motor: 3,888 US \$ (5,700 cedis);
- Complete set of nets (ranging from 1 ¼ to 2" mesh) – 16,600 US \$ (25,000 cedis).

Main running costs are fuel typically 220 L per trip costing 0.27 cedi per litre, a subsidised price compared to market price of 0.7 cedi per litre, and food and

¹ Current (February 2011) exchange rate of 1 US\$ to 1.5 Ghanaian Cedis

wages for the crew who could number up to 20. However, no wages are paid if there is no catch.

A fisherman will mostly access funds for capital and running costs from the women traders with whom he has a close working relationship. But this means he is obliged to sell his catch to the trader. When he has a large catch (could be up to 500 crates, with each crate containing 30 kilos of fish) he may also sell to other traders. At the moment, a typical sale price on the open market would be between 4 and 6 cedis per kilo.

Problems encountered are:

- having funds to maintain the nets, buy fuel and feed the crew, particularly during the low season when the catch is low;
- perceived cost of paying back loans to women traders and the long time it take for repayment;
- diminishing supply of trees is due to new conservation regulations banning use of mature trees. There is some discussion on using fibre glass on wooden frame;
- reduced size of the catch with smaller sized fish.

Some of the fishermen did obtain loans from the Agriculture Development Bank (ADB), using land and house as collateral, at an interest rate of 10%. It was necessary to have an account with the bank, demonstrating capacity to pay back loan and to provide records of the catch.

There are plenty of young men wanting to fish and become canoe owners. Currently there are 1000 fishermen and 300 canoe owners.

Cape Coast:

The costs of marine fishing out of the fishing harbour at Cape Coast are:

- 35 ft vessel: 30,000 US \$ (50,000 cedis) – not used by many fishermen;
- Marine engine: 16,000 US \$ (24,000 cedis) – but these have not been available for the last 12 years despite request to the Government to arrange imports. Therefore fishermen use adapted truck diesel engines which cost 5,000 US \$ (7,500 cedis) but these do not last as long as the marine engines;
- Canoes cost: 13 – 20,000 US \$ (20 – 30,000 Cedis) depending on number of seats (range 1 to 30, but average size is 24 seats);
- Outboard motor costs 4,000 US \$ (6,000 cedis).

A set of nets for surface and trawling cost 40,000 and 6,000 cedis, respectively – a total investment of nearly 30,000 US \$.

The majority of fishermen obtain all of the financing from women traders who receive their fish as payment – it takes a long time to pay back the loan and therefore creates a long-term relationship between fisherman and trader. A few obtain financing from banks but there is the perception that the rates of

interest are too high and there has been repossession of boats for default of payments.

Issues raised included:

- current dispute with the government over the introduction and enforcement of the need for a license to fish, although this has not been applied to canoes. The feeling is that the license should apply to all and that would restrict the number of fishermen which is seen as contributing to the problem of overfishing.
- to reduce costs, fisherman would like to see the setting up of agents to sell and maintain the marine engines – with instalments for payment.

Inland fisheries: fisherman's and fisherwoman's perspective

Interviews were undertaken at the fishing village of Dzemeni on the lake shore of the Volta Lake has 300 men and 20 women fishers who have formed an association.

The capital costs for inland fishing includes the following:

- Wooden plank canoe - 670 US \$ (1,000 cedis);
- Outboard 40hp motor – new for 3,800 US \$ (5,700 cedis) and 1,500 US \$ (3,000 cedis) for second-hand; shops selling outboards offer instalment plan for repayment which is a popular route compared to loan purchase from ADB;
- Set of three nets to cover all species and seasons – 5,000 US \$ (7,500 cedis).

The main running cost is petrol and an average day's fishing requires 10 gallons costing 30 cedis.

Fish are landed and sold to women traders who will either sell fresh to local outlets or process the fish by smoking, a small amount is salted. Fresh fish are sold by weight or size. Typically a bowl of fish (5kg) will sell for 8 US \$ (12 cedis) and a whole fish of 2-3 kg will sell for about 6 US \$ (8-10 cedis).

Smoked fish is sold locally and to intermediate traders who come to the village but a large amount is sold wholesale in Accra. Some fisherwomen will undertake their own processing and trading.

Financing is achieved in a number of ways. Capital can be sought from banks, local money lenders, family and from women traders. Bank loans require the borrower to produce references, a loan guarantor (who requires a fee), records of catch and collateral (e.g. land or house). One-year loans typically attract an interest of 25%. Money lenders charge more interest.

Fisherman will get loans (both capital and running needs) from women traders and pay back through the catch. Some fisherman/women will use loans to get their first two boats and then use profits to further grow the business. Obtaining money to begin fishing is a difficult process and can take a long

time – even the bank loan can take six months. However, fishermen said it was a worthwhile business to get into.

Fishermen would like to have more support and contact with Government fisheries officers, particularly in taking up caged fishing but they lack knowledge and the capital to start.

Aquaculture

Two small- to medium-scale owners were interviewed, one in lower Volta Lake and the other owning a fish farm half way between Accra and Cape Coast.

Volta Lake

The owner had little prior knowledge and experience of the aquaculture sector but had business friends in the sector when he lived in Asia and he saw the business potential in Ghana.

He started off five years ago by acquiring 10 acres of Government-owned land in the Kpong Irrigation Project in the lower Volta valley which had been develop originally as an area for rice production with a series of artificial canals, but rice farming had not taken off as planned. He had 6 ponds (each 0.2 ha) without the need for a lining because of the presence of clay. He obtained some brood fish from the fisheries section of the Council for Scientific and Industrial Research, which he used to produce his own fingerlings, which he distributed around the ponds to produce a steady supply of fish. He was unable to get fish beyond 500g and decided to go into cage fishing using the ponds purely to produce fingerlings. He bought land at the edge of the lower Volta Lake which gave him access rights to the water beyond his land where he has up to 35 cages, each capable taking 5,000 fish. He imports feed from Vietnam and nets from Malaysia. He has started a separate business importing fish feed (both sinking and floating types) for sale to other businesses.

The following costs were incurred:

- Long lease of 10 acres from Government at 500-600 US \$ a year which gives access to all the water he needs (this is supplied through gravity feed, with some pumped);
- Initial cost for pond construction: 20,000 US \$ from his own resources.

The main running cost (estimated at 60% of total running costs) is imported feed² at 27 US \$ (40 cedis) for a 25 kg bag (he uses 100 bags a day at peak feeding). He reckoned that it takes 15,000 kilos of feed to produce 10,000 kilos of fish with a 'farmgate' price of 4-6 cedis per kilo.

² Imported items such as feed are exempt from custom duties and VAT.

Therefore, by his estimates, an outlay of $15,000 \times 27/25 / 0.6$ US \$ will yield revenue of $10,000 \times 3.3$ US \$ i.e. total running costs of 27,000US \$ yields 33,000 US.

The owner saw aquaculture as a good business to be in but his main concern was to increase revenue by managing the marketing stage. At the moment he sells to women traders but he would like to build his own processing and cold storage facility.

He set up the business with his own funds having considered that the cost of bank loans (20 to 30%) was too high and felt that he could have wasted the loan if the business had failed due to his own lack of knowledge and experience. He would consider getting a loan for the processing and storage facility.

Key issues:

- Lack of locally produced high quality feed – he perceived that Ghanaian farmers would not be able to produce the raw ingredients all year round;
- Lack of knowledge and skills at all levels of the sector – he learned by experience and reading;
- Need to improve management of capital to yield higher profit margin;
- Improved post-harvest management and marketing (reducing the role of women traders) would provide higher profit margin;
- With increase spread of knowledge the potential for growth (including species other than tilapia) and exports is higher than in Asia, although standards would have to be raised to meet international regulations;
- Segmentation of the business e.g. dedicated feed and fingerling businesses, would increase rate of growth.

Growth in the aquaculture sector is mainly seen in medium- to large-scale businesses which are using their own funds to support capital investment to start the business and to cover running costs, although some use overdraft facilities to purchase feed.

Accra/Cape Coast

As above, the owner had little prior knowledge of aquaculture but had acquaintances in the Volta River Authority who arranged for him to go on a field trip to look at fish ponds which he saw as a potential business.

He obtained land close to the irrigation canal from the Authority - the only cost being a tribute to the local chief. The owner, who was in the construction business, used his own equipment to dig 19 ponds (each 750 m²) which are filled mostly by gravity with some supplementary pumping. He purchased fingerlings, at one cedi each, to stock the ponds at 7 fingerlings per m², costing in total approximately 100,000 cedis.

He purchases imported feed from the importer, Ranan, and feeds at a rate that produce fish that typically weigh 300g. He sells to a trader for 4 cedis per

kilo. He has started to use a cold store (electricity costs 5 cedis a week) to store and sell fish to restaurants, stores and college, averaging 6 cedis/kg.

He did not have a clear idea of his exact costs and the optimal rate for feeding but considered that he was making enough profit to give up his construction business.

Financing systems

As highlighted above, most capture fishermen receive informal loans for capital and running costs from women traders. This informal process has been present for a long time and relies on the women traders' capacity to accumulate funds or acquire loans from formal institutions who view them as lower risks than the fishermen. Little information is available to understand the terms and conditions of these informal arrangements and therefore their competitiveness with formal systems but it is clear that women traders form a vital service without which the current system would not survive.

In general, the role of women as traders and sources of finance are less important in aquaculture compared to capture fisheries with an increase in vertical integration with fish farmers selling directly to the markets and not going through women intermediaries.

Agricultural Development Bank

Agricultural Development Bank (ADB) provides finance for both capture fisheries and aquaculture.

ADB finances sea fishing through a number of mechanisms. It provides a lease financing loan to fishermen to purchase outboard motors that the Bank buys in bulk and then gives to those fishermen who can provide catch and sales records as evidence of a viable business. The cost of the motors through ADB, with support from the Government, is 20-30% less than through normal outlets. The fisherman has to produce a 20% down payment and pays the remainder through monthly payments. ADB will repossess if the fisherman defaults and then sells on. ADB will also provide normal commercial loans for other capital items such as nets and canoes.

ADB will also provide small loans to women traders and processors to finance trading and processing activities – again evidence of viable businesses must be provided.

ADB have more of a positive approach to providing finance for the aquaculture sector because this sub-sector is producing 25-30% return on loans for borrowers. For start-ups looking for funds for capital expenditure, ADB requires investors to show guarantees that they are able to provide a stake of 25 to 40% of the total costs with a supporting business plan and the necessary certificates from each of the Environment Protection Agency, district assembly, and water authority (whether for ponds or cages). This must be accompanied by proof of technical competency of the management

team (personal information and experience are checked). This aims to avoid earlier problems encountered with borrowers who did not understand basic technical issues such as fish density and feed requirements. ADB may ask external agencies such as the Ministry of Fisheries and universities to check details of the plans. The loans are normally for fixed terms of 3-5 years.

ADB will also provide overdrafts (which may be up to 1 million US \$) for companies wishing to purchase recurrent items such as fingerlings and feed in bulk.

Issues:

- Government provides subsidy to the capture fisheries sector through reduced prices for fuel which is crucial in making the sector more viable than it should be – there is a debate about the need to remove this subsidy to reduce the number of fisherman and overfishing;
- Aquaculture requires more investment for capital and recurrent costs but because of the capacity for all-year production yields greater profitability than seasonal captured fisheries which is experiencing a decline in stocks for inland and marine capture fisheries (although no scientific data support this observation);
- need for more technical and financial training for managers and technicians – Universities and polytechnics provide training but there is a need for more work-based experience for students;
- lack of locally-produced quality feed (high cost for imports), although an Israeli company is looking to build a local feed company;
- cages are less problematic and offer greater potential than ponds;
- theft of fish from ponds and cages.

The Ministry would like to have more resources to provide training at all levels in the industry and to fund their extension agents. This would help to increase the competencies and output, particularly in aquaculture.

Pro-Credit financing company

Mostly based in Accra, Pro-credit have provided secured loans to marine fisherman with the following conditions:

- Must have at least six months of experience (no new start ups considered);
- Records of catch and sales;
- Guarantors and references;
- Access to inspect the current business;
- Demonstration of management skills;
- Collateral such as titled land and house.

For normal loans up to 120,000 US \$ a monthly interest rate of 2.5 % is charged. The amount repaid is based on the amount owing every month, so the more the loan is reduced the less the repayment. The length of the loan period depends on the cash flow of the business. Payments will also be reduced during the low season when the catch is less.

They have not yet considered financing inland fisheries and aquaculture because these are located far from their branches and it would be difficult for the borrowers to come to the bank every month to deposit repayments. The aim is to open branches in other parts of the country and this may include areas where aquaculture and inland fishing takes place.

Prudential Bank

Prudential Bank have little loan business with marine fisheries, although there was a clear understanding of the risks associated with the sector. They prefer to provide short-term loans to women traders, mostly for running costs, seeing this as a relatively lower risk than lending directly to fishermen since the women traders have more business knowledge and overall higher cash flow than fishermen. However, the Bank recognised that these informal systems may be financially more onerous for fishermen than more formal credit systems, but at the moment there is no data to determine this.

The Bank would like to see a capacity strengthening programme to increase fishermen's financial management skills and knowledge of banking systems. This would be a first step into developing a credit programme for fishermen beginning with the fishermen opening and using regularly savings accounts in order to determine their cash flow and potential for loans.

General conclusions

In assessing the provision of financing, the following opportunities and challenges were identified:

- More in-depth studies are required to understand the full costs to fishermen of using informal loans, notwithstanding the key role that women traders play in providing financial services and managing the risk in this sector;
- Capacity strengthening to improve the ability of fishermen to keep records and to make them aware of the advantages of using formal banking systems would increase their opportunities to make use of more formal credit systems;
- Aquaculture appears to offer more opportunities for growth compared to the capture fisheries sector which is suffering from declining stocks and relatively large number of players;
- Lack of technical capacity appears problematic at all levels in the aquaculture sector, particularly in managing fingerling stocks and optimising feed rates and stock density – the later is crucial in maximising returns on capital and variable expenditure;

- Increase resources are required to support the advisory services in providing advice to all fisheries sectors – this does not necessarily have to be solely through Government funding since a profitable fishing sector should be able to play a bigger role in resourcing and managing this support.

Sources of information

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Asmah, R. (2008). Development potential and financial viability of fish farming in Ghana. PhD Thesis. University of Sterling, United Kingdom. pp 269.

Kaunda, E. K. W., Abban, E. K. and Peacock, N. (2010). Aquaculture in Ghana: its potential to be a significant contributor to national fish supplies. Draft report.

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Appendix 1. Tasks

1. **Establishing the Context:** A brief analysis of the aquaculture sector in Ghana will be undertaken. Much of this information is already available and has recently been collated as part of the preparation for the WB funded Fisheries development Programme. Available information includes
 - Broad segmentation of the fisheries and aquaculture sector
 - Geographic distribution of fisheries and aquaculture activities
 - Production trends and forecasts
 - Markets and market forecasts
 - Basic value chain of the fisheries aquaculture system
 - Government aspirations and targets for the aquaculture sector
 - Financial and operational support available to those involved in the sector.

2. **Identifying suitable candidates for case studies:** Up to four (but no less than 2) operators will be identified. In selecting these, the following will be taken in to consideration:
 - It is the intention to focus on the SME sector. The candidates for interview should therefore fit in to this sector.
 - The candidates for interview should be involved in the fisheries/aquaculture sector as their main activity.
 - It would be useful to get a mix – Perhaps one operator from the aquaculture sector, an Artisanal canoe owner and also a processor. With regard to the latter, there are a number of small fish processors who smoke fish for export to Europe.

3. **Undertake interviews:** The objective is to understand the process by which the interviewee developed his business. The interviewees' perceptions of the process are of critical importance. That is to say his/her perception of the facts is as important as the actual facts! Among issues to be addressed are:
 - The history of the business. For example, did it develop through organic growth or investment. For example, if interviewing a fish farming business, did this develop from a one – pond operation or did it develop through a larger investment.
 - What are the basic economics of the business? What were the investment costs, what is the annual turnover, what is the cost of production etc? What is the profitability? We need enough to understand the moving parts. We do not need to do a detailed economic analysis.
 - What are the interviewees' perceptions of the strengths, weaknesses, opportunities and threats of the business he./she is in?
 - What are the financing needs – investment and cash flow?
 - How were these financing needs met?
 - What roadblocks were encountered and how were these overcome?

4. **Meet with Financing Institutions:** Although many of the financing needs will be met through informal investment in equity (savings, family and friends), it is expected that some at least will be met through formal financial institutions. If this is the case, it would be useful to meet with these financial institutions to understand their perceptions of investment in the fisheries/aquaculture sector.

Appendix 2. Itinerary and People met

Date	Morning	Afternoon
31/01/2011	Briefing meeting to discuss schedule and implementation plan Meeting with Fisheries Department (MoFA) staff	Agriculture Development Bank, Accra
01/02/2011	Small-scale aquaculture operation, Akuse	Small-scale marine fishermen, Tema
02/02/2011	Small-scale inland fisher people and processor, Dzemeni, Lake Volta	Pro-Credit (private sector financial company) loan officers
03/02/2011	Small-scale aquaculture owner, cape Coast	Marine fishermen, Cape Coast
04/02/2011	Head, Credit Control Unit, Prudential Bank	Report writing

Ministry of Food and Agriculture

Lionel Awity, Head of Department of Fisheries (lionelawity@yahoo.co.uk)
Scott, Regional fisheries officer for Tema.

Agricultural Development Bank

Kwabena Sarpong: Agriculture Portfolio Manager, Development Finance Unit.
(ksarpong@agricbank.com)

Polycarp Kwame Akobeng: Agriculture Portfolio Manager-Sector,
Development Finance Unit (kakobeng@agricbank.com)

Pro-Credit

Ivy Adjei: Client relationship manager (agriculture)
(i.adjorkor@procredit.com.gh)
Hassan Ibrahim: credit analyst for agriculture clients

Prudential Bank

George A. Adjei, Head of Credit Control Unit
(george.adjei@prudentialbank.com.gh)

Fishers and traders

Solomon Owusu Nyanvurye and colleagues – fisherman/canoe owners,
Fisheries Harbour, New Town, Tema.

Paul Effah Wardie, businessman and owner of aquaculture business Anson Greenfield and Richard Kofi, farm manager.

Eva (fisherwomen, trader and processor) and Gulu (fisherman), Dzemeni fishing village.

Sertoh Mensah, Fisherman and Secretary General of Ghana Fisheries Association, Cape Coast