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POVERTY REDUCTION BY INCREASING THE COMPETITIVENESS OF ENTERPRISES (PRICE)



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Aniruddha Hom Roy/ COTR
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Executive Summary

The PRICE project began in February 2008 with a goal to reduce poverty by increasing competitiveness in the aquaculture, horticulture and leather products sectors in Bangladesh. PRICE took a value chain approach in identifying, analyzing, and addressing major constraints across the selected sectors through targeted interventions. PRICE activities are market-driven and seek to share the benefits of growth with women, young adults, farmers and SMEs.

PRICE has engaged groups of farmers and small and medium-sized enterprises as partners in addressing value chain constraints with a goal to achieve economic growth. The project has assisted organizations across the value chain, including individual firms, associations, cooperatives, and NGOs. In doing so, PRICE worked to improve skills, expand access to information, link enterprises to markets, and expand access to finance. In each of these activities, PRICE was able to leverage resources by cost sharing with partner organizations and beneficiaries. Through such partnerships, the project expects to multiply the impact of program activities and the investment of partner organizations, leading to growth of the entire sector.

During the reporting period PRICE assisted 22 SMEs, 15 micro-enterprise associations, and 11 contract growing initiatives in the three sectors to improve their competitiveness in both domestic and international markets. Through these efforts the project has helped generate additional sales of USD 12.7 million to date. During fiscal year 2009 PRICE created 1,658 full-time equivalent jobs and achieved an increase of \$520,000 in investment.

One of the key areas of intervention during the year was training of both workers and managers. 1,616 persons (466 female) participated in PRICE-assisted workforce development programs; 1,081 people (419 female) received assistance for improved management practices, and 6,789 MSMEs (1,922 female-led) were assisted for improved productivity. 129 MSMEs (50% female-led) received assistance from PRICE-supported sources to obtain loans.

In the **horticulture sector** PRICE worked to improve farm productivity, post harvest handling, and market linkages. The project worked with four seed producers, one vegetable producer, one fertilizer producer, four organized farming groups, and two farmers' associations. Based on the particular needs for assistance, PRICE provided these partners with training on improved farming technology, better farm management, knowledge on good quality inputs, proper post harvest handling, processing and market linkages.

PRICE assisted Konika Seed Company Ltd, Syngenta Bangladesh Ltd., Lal Teer Seed Ltd., and Padma Seeds to increase the production of good quality seeds. The project helped Konika Seed to train 92 farmers on improved farming and contract growing systems, 35 laborers on post harvest grading, and 23 farmers on primary processing techniques. Syngenta Bangladesh and Lal Teer Seed have well established sales networks throughout Bangladesh, enabling them to train 1300 input dealers on improved farming using their seeds. Dealers, in turn, provided training and information

to farmers as embedded services while selling the seeds. As a result, approximately 60,000 farmers gained information on improved farming. PRICE is assisting Padma Seeds with improved processing techniques and contract farming to increase seed yields. Approximately 180 farmers will directly benefit from this effort.

PRICE assisted Surovi Agro Limited, a potato producer and exporter to enhance the quality of their product and increase their yield. Under this initiative 118 farmers were trained, including 37 women.

Organix, AID Agro Mart, GUKED and EFDAF are now partnering with PRICE to form organized farming efforts or contract farming arrangements. Under this initiative, 2,350 vegetable farmers are being assisted to navigate the complex terms and conditions of contract farming, improved farming technology, and management. Farmers are able to sell their products through contractors, who in turn are being assisted to sell the products to the market. These efforts are conducive to the efficient production and sale of safe vegetables.

In addition to these efforts, PRICE is working with two farmers' associations - Vater Char Cooperative Society and Agricultural Advisory Society - to improve farm productivity and establish linkages with exporters. Approximately 950 farmers will directly benefit from increased production and income through this effort.

PRICE interventions in the **aquaculture sector** were based on tailored approaches for the two subsectors, fish and shrimp. The production of fish in Bangladesh is mainly targeted to the domestic market, whereas shrimp production is targeted to the export market. Cultivation techniques are also different for each of these crops. In the fish sector PRICE focused on improving farming technology. The project worked with farmers' and traders' associations as well as with input producers. In the shrimp sector, project activities focused on increasing productivity, ensuring compliance with industry standards, and improving traceability through organized farming approaches. In these efforts, PRICE partnered with two subcontractors: Winrock International and World Fish Center, leveraging their in depth technical knowledge and experience working in the Bangladeshi shrimp sector.

In the **fish subsector** PRICE is assisting eleven fish farmers' associations, one fish seed traders' association, and one feed mill to increase productivity and improve farm management and workforce development. Approximately 4,100 member farmers have been trained on improved farm management and increased productivity by PRICE aquaculture specialists. The project informed farmers of the benefits of using good quality inputs in fish production. To enhance the supply of quality inputs, PRICE provided a fish seed traders' association with training on improved farming techniques and linked association members to farmers. The project linked farmers to sources of inbred-free spawns, leading to higher production. PRICE is working with feed mills to improve feed formulation and improve overall feed production.

In the **shrimp subsector** PRICE worked to improve labor and environmental compliance and farm productivity. To promote labor compliance in processing firms, PRICE partnered with the Bangladesh Shrimp and Fish Foundation (BSFF) to train 10

processing firms in Khulna, Chittagong and Cox's Bazar. BSFF is examining these firms and formulating recommendations for compliance. To increase the traceability of exportable shrimp, PRICE assisted the Department of Fisheries' FIQC lab staff to comply with EU food safety requirements and to strengthen microbial, chemical, antibiotic, and general testing procedures towards 17025 certification. In turn, 100 additional lab operators were trained by these trainees.

Through the GHERS project, PRICE and WFC provided assistance to approximately 2600 farmers to improve shrimp farming techniques. Six shrimp depot owners in the Khulna-Bagerhat area have partnered with the GHERS project to organize and train farmers, providing a guaranteed supply of good quality shrimp. 12 depot staff members were trained on high yield shrimp farming and group procurement of inputs. In turn, they trained farmers in the same techniques. Farmers were also provided with screened PL and a PCR Lab in Cox's Bazar was subcontracted to provide a consistent supply of screened PL to GHERS farmers. All of these efforts led to measurable increases in shrimp productivity.

To ensure increased productivity and traceable production throughout the value chain, PRICE assisted depot owners and processors to organize farmers under contract farming system, ensuring a consistent supply of good quality shrimp. Depot owners, depot staff, and farmers were trained on contract farming systems, improved farm management, and production techniques.

In the **leather sector**, PRICE is emphasizing workforce development and improvement in the quality of raw hides. The project is also working to expand market opportunities, both domestically and abroad, and is teaming with a Bangladeshi institution provider of international testing and certification for leather products.

To facilitate the expansion of a skilled labor force PRICE strengthened the capacity of the Technical Training Center at Tangail and the Bhairab Training Center at Narshingdi. As a direct result of these efforts 338 women and 242 men were trained, many of whom soon received employment offers in the leather industry.

PRICE started working with the Leather Goods and Footwear Manufacturing and Exporters Association of Bangladesh (LFMEAB) to build workforce skills, strengthen SME capacity to serve as sub contractors for lead manufacturers, and enhance market linkages in the sector. PRICE is providing policy level assistance to the Association as well as customized assistance to its individual members. Two members of LFMEAB, Apex Adelchi Footwear and Bay's Footwear have employed individuals trained under PRICE initiatives, and the project is working with Apex to develop a skilled workforce on a cost-share basis.

Improper flaying practices lead to a decreased supply of raw hides in the Bangladeshi leather sector. To address this issue, PRICE facilitated an awareness campaign in November 2008 before Eid ul Azha, when the majority of raw hides are produced. To raise awareness and provide information on proper flaying, workshops were conducted in slaughterhouses and road-shows were conducted in cattle-*haats* and other public places. Approximately 539 flayers and slaughtering assistants were reached, road

shows were conducted in 15 cattle-haats divided in three zones for 5 days, and 100,000 leaflets were distributed. PRICE will conduct a similar activity in November 2009.

In all three sectors PRICE has strived to achieve equity integration by ensuring that poor producers at the bottom of the value chain are benefiting from project interventions. Moreover, PRICE has already achieved 25% women representation in its beneficiaries, leading to significant women empowerment. Ethnic minority groups have also been assisted for increased productivity, organizational strengthening and harmonious coexistence with their Bengali counterparts.

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ACRONYMS AND ABBREVIATIONS

AFL	American Federation of Labor
ATDP	Agro-based Industries and Technology Development Project
BCLT	Bangladesh College of Leather Technology
BFFEA	Bangladesh Frozen Foods Exporters Association
BFVPEA	Bangladesh Fruits and Vegetables Producers and Exporters Association
BLSC	Bangladesh Leather Service Center
BMET	Bureau of Manpower, Employment, and Training
BSFF	Bangladesh Shrimp and Fish Foundation
BSC	Business Service Center
BTC	Bhairov Training Center
CIO	Congress of Industrial Organization
CIDA	Canadian International Development Agency
CEO	Chief Executive Officer
COP	Chief of Party
DD	Deputy Director
DMBBS	Digarkanda Motsapona Baboshai Bohumukhi Somity
DoF	Department of Fisheries
DBE	Din Bijoy Enterprise
EF	Extension Facilitator
EU	European Union
FIQC	Fish Inspection and Quality Control
GDP	Gross Domestic Product
GHERS	Greater Harvest for Economic Returns in Shrimp
GOB	Government of Bangladesh
GSP	Generalized System of Preference
ILO	International Labor Organization
ITC	International Trade Center
ILAC	International Laboratories Accreditation
KRA	Key results area
LCDF	Local Currency Development Fund
LFMEAB	Leather Goods & Footwear Manufacturers & Exporters Association
LSC	Leather Service Center
LEIC	Local Enterprise Investment Center
M&E	Monitoring and evaluation
MoC	Ministry of Commerce
MoFL	Ministry of Fisheries and Livestock
MoU	Memorandum of understanding
NABL	National Accreditation Board for Laboratories
NGO	Non Government Organization
PAMA	Policy Analysis, Monitoring and Assessment project
PCR	Polymerase chain reaction
PD	Project Director
PFPPA	Phulpur Fish and Prawn Farmers Association
PIR	Project intermediate results
PL	Post-larvae
PMP	Performance monitoring plan

PPP	Public-private partnership
PRICE	Poverty Reduction by Increasing the Competitiveness of Enterprises
QFL	Quality Feed Limited
RDF	Rakhaing Development Foundation
RMG	Ready Made Garments
SEDF	South Asia Enterprise Development Facility
SMEs	Small and medium enterprises
SQSP	Shrimp Quality Support Project
SSOQ	Shrimp Seal of Quality
STTA	Short-term technical assistance
SSS	Society for Social Services
TAPP	Technical assistance project proposal
TFFS	Trishal Fish Farmer Business Somity
TMUS	Trinomul Manobik Unnayan Sangstha
TOT	Training of trainers
TTC	Technical Training Center
UK	United Kingdom
USA	United States of America
USAID	U.S. Agency for International Development
USD	United States dollar
USG	United States government
USTR	United States Trade Representative
WFC	World Fish Center
WSSV	White Spot Syndrome Virus

PRICE Annual Report: FY 2009

1. Background

PRICE is a five-year USAID economic development project in Bangladesh, initiated in February 2008. Its goal is to reduce poverty by increasing competitiveness in the aquaculture, horticulture and leather products sectors. PRICE activities are market-driven and seek to share the benefits of growth with women, young adults, farmers and SMEs. PRICE takes a systemic view in identifying, analyzing and addressing root constraints across the sectors, and then proceeds to address these constraints to sector growth through various interventions.

The PRICE project implements its activities through its own technical staff, hired consultants and/or subcontracts.

- Sector technical teams: There are three sector teams in charge of addressing, respectively, aquaculture, horticulture and leather products. Each has the primary responsibility for identifying the constraints and opportunities in their corresponding sector, designing and implementing interventions to address these constraints, and taking advantage of the opportunities to enhance the competitiveness most efficiently, effectively and equitably.
- Hired consultants: PRICE can hire external consultants, both local and international, to complete specific and specialized short-term assignments.
- Subcontracts: PRICE subcontracts some project implementation responsibilities in Khulna, Bagerhat, Chittagong and Cox's Bazar. During the reporting period PRICE had three subcontracts:
 - WorldFish Center was subcontracted to implement the "Greater Harvest and Economic Return from Shrimp (GHERS)" initiative in the Khulna and Bagerhat area. This is aimed at increasing the productivity of shrimp farming and enhancing the quality of produce by introducing improved farming practices to over 2,600 small shrimp farmers.
 - Winrock International was subcontracted to operate a business development center for the horticulture and aquaculture sectors in the Khulna area. They have completed their work tenure in September 2009.
 - Bangladesh Shrimp and Fish Foundation was subcontracted to create greater awareness and labor law compliance in 10 pilot processing firms located in Khulna, Chittagong and Cox's Bazaar.

PRICE can partner with individual firms and associations facing specific constraints and facilitate solutions to realize opportunities and accomplish progress. The project's technical team helps identify buyers, organizes SME suppliers, facilitates access to finance, and – on a cost-share basis - arranges for training and technical assistance. The focus of PRICE in these partnerships goes beyond the benefit of any individual entrepreneur or group of entrepreneurs, but is intended to promote the overall growth and development of the sectors.

1.1 Reporting Period

This annual report is prepared for USAID and it contains the progress of the project in the three sectors during the U.S. fiscal year October 2008-September 2009. The previous annual report submitted to USAID covered the period February 2008 to March 2009. As USAID has requested the reporting of annual progress as per the U.S. fiscal year, this report necessarily repeats some of the project activities included in the previous annual report.

1.2 Report Preview

The report is divided into six sections. Section One introduces the project and its three selected sectors of aquaculture, horticulture and leather goods. Section Two describes the progress of the project in the horticulture sector. Section Three describes the aquaculture sector's progress, segregated into the fish and the shrimp sub-sectors. Section Four elaborates on the progress in the leather sector in the last fiscal year. Section Five contains the results of a study to identify financing opportunities, particularly through DCA. In closing, Section Six provides the project's equity integration activities and conclusion of the report.

2. Horticulture

The horticulture sector contributes approximately 3.6 percent to the GDP of Bangladesh. Economic growth, rising incomes, and urbanization have led to a growing domestic demand for fresh fruits, vegetables, and spices that vastly exceeds the current supply. This growing gap between the demand and supply for Bangladeshi horticultural products presents enormous opportunities to expand production, generate income, and create jobs throughout the value chain. Around 10 million farmers participate in the value chain and significant growth opportunities exist for processed fruits and vegetables on the domestic market.

PRICE is working to improve the domestic supply and export potential of key products that are in high demand by identifying constraints throughout the value chain that impede growth. Along with productivity and post harvest losses, which are the major areas of concern, access to market, quality certification, social and environmental compliance, as well as access to finance are the issues in this sector. Quite often the issues are overlapping and interlinked and removal of one can automatically eliminate others (for example, compliance is closely related to access to export markets).

Project areas of intervention are determined by technical considerations as well as through discussions with stakeholders, and are always market driven. For this purpose, PRICE conducted a first workshop in August 2008, which brought together key industry players, SME entrepreneurs, horticulture specialists/academicians, representatives from Bangladesh Fruit and Vegetables & Allied Products Exporters' Associations, Hortex Foundation, and relevant government officials. PRICE followed up this workshop with visits to input producers and distributors, horticultural crop producers, processing firms, exporters, etc.), and conducted individual meetings to have their insights as well as validating the workshop findings.

On 19 August, 2009 PRICE organized – jointly with the Market Development Forum – a day-long workshop on “Expanding Horticulture Exports of Bangladesh”. Local and international horticulture specialists, business and association representatives, exporters, NGOs and farmers attended the workshop. Two days later PRICE organized a crop selection workshop, during which two international experts led a group of distinguished local specialists in identifying horticulture crops with particular potential in Bangladesh.

In horticulture PRICE uses an integrated approach to improve farm management through contract farming that has increased the productivity of farmers, augmented exports and ensured a market linkage for the produced crops. For widening the market linkage, PRICE supported its partners in post harvest handling, packaging of products, linking the producers with the processing firms, and facilitating workshops for knowledge sharing. The partners PRICE collaborated with included vegetable producers, seed producers, and farmers’ associations.

2.1 Capacity Development and Improved Farm Management Practices

2.1.1 Assistance for Contract Farming

Contract farming is a powerful tool to convert the weak and fragmented supply chain into a strong integrated value chain. PRICE is supporting a number of contract farming initiatives in the horticulture sector with the aim to enhance farmers’ access to quality farming inputs, knowledge and information required to practice improved farming techniques, better access to value chain financing, and guaranteed market for their produce.

Contract Farming is an arrangement between farmers and sponsor contractor under which the sponsor provides farming support to the contract-growers and – in turn - the farmers agree to sell their produce to contractors at a negotiated price.

Konika Seed Company Limited

Konika is mainly a potato and vegetable seed company located in the Chuandanga District. The company works with 65 farmers on 55 acres of land, in addition to its own five acres for producing potato seeds. Konika also works with 27 vegetable seed growers on 18 acres of land in addition to its own five acres. The model they have been following is called the “nucleus-estate model.” With PRICE support, Konika Seeds provides the following services to its contract farmers:

- Access to quality inputs: Konika ensures the supply of quality planting materials, fertilizers, pesticides and other necessary inputs.
- Access to improved farming techniques: With assistance from PRICE, Konika trained 92 farmers on improved farming techniques and the contract farming system. PRICE also supported the company to provide close supervision and monitoring to ensure improved practices through in field demonstrations.

- 35 laborers were trained in the sorting and grading of potato seeds which was helpful for the collection of quality potato seeds. 23 farmers were trained in vegetable seed harvesting and primary processing.
- Access to credit: Konika arranged credit for the contract farmers to procure inputs and conduct farming activities.
- Access to market: Konika purchased the full production output of the contract farmers at a negotiated price.

The initiatives Konika adopted to increase production and revenue were very productive. During the last potato growing season the outbreak of ‘Late Blight’, a fatal disease for potatoes, was prevalent throughout the country, which significantly decreased the quality and production of the crop. Starting from last quarter (Oct-Dec) of 2008, Konika Seed successfully helped farmers to produce disease-free potato seeds and bought the potato seeds from these farmers at a fair market price. In addition to potato, Konika also sold high quality vegetable seeds of different varieties with total revenue of about USD 31,250 during Jan to Sept 2009, a 267% increase compared to that of the similar period of baseline (USD 8,500).

GUKED

GUK Enterprise Development is a commercial entity of GUK, a local NGO formed in April 2009. They started their horticulture farming through seed potato, table potato and other vegetables, but needed links to buyers and assistance in product promotion. They also wanted to expand their program through contract farming, but lacked experience in the contract farming system. The targeted farmers’ groups had no exposure to modern technology for commercial cultivation of vegetables.



PRICE signed an MOU with GUK in July to develop a vegetable contract farming model with 1,500 farmers. For the upcoming winter season beginning in October GUKED has plans to utilize contract farming in 13.5 hectares of land for seed potato, and 188.9 hectares of land for table potato. After harvesting potato, the GUKED associated farmers will produce various vegetables including bitter melon, cucumber, brinjal, pointed gourd, and coriander during the remaining months on 202.4 hectares of land.

During the reporting period 810 farmers received training on crop husbandry, pest management, post-harvest handling operations and marketing. Along with technical assistance, GUKED will provide required inputs and funds through the microfinance scheme of GUK to the farmers. Spice Research Institute will provide training on off-season onion cultivation to the selected farmers of GUKED and establish demo plots on farmers’ fields. Through these means, a long and fragile supply chain will be converted into a strong value chain with high quality produce reaching the market to ultimately increase farmers’ revenue.

Organix

Organix is the sister organization of Pathikrit, a local NGO. In 2008 Pathikrit disbursed a loan of approximately BDT 375,000 to its members in Khulna for vegetable production to help alleviate the production of low quantity vegetables due to a lack of technical knowledge, information, quality inputs, and improved farming practices. Furthermore, Pathikrit found that the excessive use of chemical fertilizers and pesticides to increase production instead of the use of compost fertilizer was creating health-hazards to consumers while also increasing farmers' overhead costs.

Forming a separate organization, "Organix," Pathikrit's sister NGO was specifically chartered to help farmers produce and market safe vegetables free from excessive chemicals, while Pathikrit provides microfinance services. Organix signed an MOU with PRICE in September to develop a contract farming model for safe vegetable production following the basic concepts of GAP.



AID Agro Mart

Since its inception in 1992 this local NGO has been working in various areas of development, with an emphasis on attending disadvantaged and underprivileged groups. In 2006 AID implemented the "Organic Agriculture Development" program with the objective to increase production and export of organic vegetables through enhancing local farmers' knowledge and skill set. However, the program could not produce organic vegetables as it did not have the assistance of proper certification agencies, specialized technical support or laboratory facilities. To support AID in developing an out grower's scheme for the production and marketing of organic vegetables, PRICE signed an MOU with AID Agro Mart, AID's business enterprise, to provide technical assistance for vegetables production, GAP, post harvest handling, market linkages, market promotion, and linkage development with different types of inputs suppliers.

Padma Seeds

Founded in 1992, Padma Seeds is a private seed-supplying company located in Jhenaidaha. The company has a good market share with average monthly sales of around BDT 188,360. With the aim to ensure high quality seeds and increased sales, Padma Seeds began to broadly utilize contract farming, adopt higher processing standards to clean and reduce moisture contents, and use aluminum foil packaging. PRICE signed an MOU with Padma Seeds in September to assist them in adopting a good contract farming model through training of farmers and linkages with Bangladesh Agricultural Development Corporation (BADC) seed processing center and packaging. PRICE will work with the company in improving the quality and supply of a variety of horticulture seeds, including red amaranth, amaranth,

pumpkin, ridge gourd, snake gourd, bitter gourd, yard long bean, cucumber, kangkong, spinach, Indian spinach and bottle gourd.

2.1.2 Assistance for improved production of export grade potato

Surovi Agro Ltd.

PRICE signed an MOU of joint collaboration with Surovi Agro Limited on 17 September 2008. Surovi produces table potato and exports the same to Sri Lanka, Singapore and Malaysia. Barely 40% of the production meets export standards, resulting in unmet export demand and decreased profitability. PRICE has been working with Surovi to enhance the quality of the produce as well as increasing the yield per acre. Accomplishing these can have far reaching consequences on potato export from Bangladesh. The following activities were done to accomplish this goal:



- PRICE facilitated in creating a manual on exportable potato production. This manual is the first of its kind and provides effective guidelines to produce export grade potatoes.
- With PRICE's assistance, Surovi Agro provided training to 118 potato farmers following the newly developed manual on producing export grade potatoes. 37 of the trained farmers were women.

2.1.3 Farmers increased access to information and seeds for increased productivity

Farmers' enhanced access to relevant information and quality inputs is an important element for achieving higher productivity in the horticulture sector. To facilitate the development of a sustainable information system, as well as to enhance farmers' access to quality horticulture seeds, PRICE signed separate MOUs with two renowned seed producing and marketing companies: Syngenta and Lal Teer Seeds Ltd. In addition, PRICE also provides marketing support to SME seed supplier Abu Saleh Seeds.

Syngenta Bangladesh Limited



Syngenta is a leading multinational company in the business of seed and crop protection. They market their products through a network of 15,000 retailers and 380 distributors all over Bangladesh. On 12 January 2009, PRICE signed an MOU with Syngenta to assist in training 648 of their affiliated input dealers. The trained dealers have now started providing

embedded extension services and information to some 30,000 farmers on inputs and farm management practices. Each of these trained dealers has also established a demo-plot to showcase the result of improved farming practices to their customers and the neighborhood farmers. In addition, Syngenta has also provided training to 96 women, working as their market developers to strengthen the system.

Lal Teer Seeds Limited

Lal Teer is a leading national seed producing and marketing company in Bangladesh. On 30 November 2008, PRICE signed an agreement with the company to provide assistance in developing a training manual for the input dealers of the company. Using the manual, Lal Teer provided training to 605 input sellers with support of PRICE. These trained dealers are now providing relevant information and embedded extension services on inputs and farm management practices to 30,000 of their customers. Like the Syngenta-trained input sellers, each of Lal Teer's trained input sellers will also establish a demo plot to demonstrate the methods and results of improved farming practices.



Abu Saleh Seeds

PRICE signed an MOU with Abu Saleh Seed, an SME seed supplier, in October 2008 to provide assistance in developing quality packaging for the range of seeds they market in Jessore and neighboring areas. The packaging will provide the farmers with relevant information about the seeds and best application procedures. Farmers will thus get easy access to useful information and will purchase this seed in increased quantity as it will help them to increase production. In turn, Abu Saleh Seed will achieve increased sales of its seeds.

2.2 Improving Marketing and Market Linkages

PRICE works with SMEs and groups of farmers for improved handling of products and expanding horticulture markets at home and beyond.

2.2.1 Facilitating Proper Post-harvest Handling and Packaging

Al-Fida Multipurpose Co-operative Society Ltd

Al-Fida is a farmers' cooperative in Chapainababganj, where Bangladesh's best quality mangoes are produced. Last season the cooperative sold their mangoes in Dhaka. However, farmers were not able to be profitable due to poor packaging and inappropriate transportation which resulted in 8 MT of damaged mangoes in the 2008 mango season that were unable to be sold. Before the start of the mango selling season in 2009, the co-operative came to PRICE and requested help to control damage as well as to assist in market linkages. PRICE visited

mango orchards & discussed the production, packaging & transportation chain. PRICE discovered that the farmers had a problem in packaging: they were used to packing their mangoes in traditional straw-cushioned bamboo-made baskets covered with jute clothes. This sort of packing helps in quick ripening of mangoes, but is not suitable for long distance transportation in large quantities. Another problem PRICE identified was that farmers were accustomed to selling mangoes in bulk to the assembly market without any confirmed orders from their customers. They also did not have the capacity or the infrastructure to store this very sensitive and perishable produce properly.

PRICE worked with the cooperative to find a solution and ultimately decided on using 25-kilogram plastic packaging crates to solve the problem. Mangoes were packed in layers with rice straw cushions between them, significantly reducing the damage. The second initiative the farmers adopted was to not gather mangoes without any confirmed order. On average, the cooperative farmers sold 12 tons of mangoes per day, and no loss was reported during this year in comparison to last year's total loss of 8 metric tons. Al-Fida Multipurpose Co-operative Society sold BDT 4,920,000 this season using the new packaging crate and the new marketing approach.



2.2.2 Linking Farmers with Processors

Vater Char Cooperative

Vater Char Farmers' Development Cooperative Society is a newly formed association mainly consisting of one hundred vegetable farmers in the area of Norsingdi. PRICE has facilitated in linking the cooperative with Golden Harvest Agro Industries Limited, a 100% export-oriented, HACCP-certified agro based food processing company in Bangladesh that exports frozen vegetables to USA, UK and Middle East. Golden Harvest Agro has already bought five metric tons of vegetables from the association as a test case, and the PRICE horticulture team has finalized an MOU for working with the Vater Char association.

2.3 Training Summary

Trainings have been provided in three categories: workforce development, improved technology and improved management practices. Table 1 below shows the training summary for the horticulture sector:

Table 1: Training in Horticulture

SL	Partners	Workforce			Technology			Management		
		M	F	T	M	F	T	M	F	T
01.	Surovi Agro.	21	28	49	75	37	112			
02.	Konika Seeds				92	-	92			
03.	Syngenta Bangladesh	-	96	96				648	-	648
04.	Lal Teer Seeds							604	-	604
05.	GUKED				810	-	810			
Total Participants		21	124	145	977	37	1,014	1,252	-	1,252

2.4 Accomplishments in FY 2009

PRICE has facilitated increased sales of \$90,000 through partnerships in the horticulture sector, \$60,000 of which were from exporting processed vegetables mainly from Surovi Agro Ltd and Konika Seed Company. A total of 60 fulltime equivalent jobs were created in the sector through PRICE's assistance, of which 12 are female. PRICE has also helped generate \$100,000 in new investment in the sector.

Table 2 shows the Horticulture sector's key achievements during the quarter:

Table 2: Summary of Achievements in Horticulture

Indicators		Achievement Accumulated to Sept '09		
		Total	Women	Men
Sales (USD)	Domestic	\$30,000	N/A	N/A
	Export	\$60,000	N/A	N/A
	Total	\$90,000	N/A	N/A
Jobs		60	12	48
Investment (USD)		\$100,000	N/A	N/A

2.5 Plans for FY 2010

The sector unit will address horticulture development constraints by partnering with farmers' associations, lead firms interested in processing and in implementing contract farming systems, business and extension service providers, and local NGO's that work with small horticultural farmers. One of the main foci will be on increasing farm productivity by improving farmers' knowledge and skill through training and demonstration. Information

dissemination on technology, inputs and application will be continued in order to bring more farmers under organized and improved farming practices. PRICE will continue to engage with the input producing and marketing enterprises to improve the quality of inputs and their availability to small producers. Improved cropping pattern and crop rotation will be promoted to reflect the reality of climate change and increased food safety requirements.

PRICE will work with a variety of crops, depending on market potential, agro-ecological zones, partners' preference and climate change factors. This means that the list of targeted crops will be a dynamic rather than a static one. However, PRICE will give special attention to potato, mango and eggplant, which have been identified for their growth and value-added potential.

3. Aquaculture

Bangladesh has approximately 4.9 million hectares of land suitable for aquaculture, yet it is still performing far below its potential productivity. Thousands of poor farmers, fry collectors, PL traders, day-laborers, transporters, and factory workers are involved in the sector. In addition there are hundreds of SMEs that participate in the upper part of the value chain, including depot owners, agents, processors and exporters. In Bangladesh aquaculture plays many roles, from alleviating protein deficiency and malnutrition to generating employment and foreign exchange earnings. The present per capita annual fish consumption in Bangladesh stands at about 17.23 kg/year against a recommended minimum requirement of 18 kg/year (DoF 2009), hence there is still the need to improve fish consumption in the country. In the case of exports, Bangladesh constitutes a small portion of the world fish market, as the huge water resources of the country are under-capacity. Bangladesh has the potential to expand its export market for fisheries. On the production side, annual fish production per hectare in the ponds of Bangladesh in 2007-2008 was 2.66 MT, which can be increased to 7 to 8 MT per hectare (DoF, 2009).

Shrimp and finfish are the two major components of aquaculture in the country. While shrimp is farmed in the coastal belts, finfish farming is done in the inland sweet-water bodies like ponds, beels, haors, natural depressions, oxbow lakes and estuaries. On the one hand, while 98% of farmed shrimp is export-oriented, on the other, only 1% of produced fish from Bangladesh goes abroad, to ethnic markets. Fish export has good prospects both in ethnic and general markets abroad. There are other contrasts in fish and shrimp marketing: the fish value chain is very primitive in the domestic market, and even its export value chain is mainly product-based. For shrimp, the value chain is both product and service based. For these reasons PRICE has decided to separate its aquaculture sector activities into the two sub-sectors of fish and shrimp.

In addition to private sector partners, PRICE collaborates through various activities with MoFL, DoF, Bangladesh Fisheries Development Corporation (BFDC), BFFEA, BSFF and the Bangladesh Fisheries Research Institute (BFRI). PRICE also has the mandate to coordinate its activities with NGOs and development organizations working in the same area.

3.1 Fish

The finfish value chain includes approximately 2 million fish farmers, 8,712 nurseries, 950 hatcheries and 1200 depots (DoF, 2009). It has high potential for growth both in the local and international markets. Exports of frozen finfish increased by 15% in the last fiscal year. The sector provides most of the animal protein consumed within the country. In pond-based aquaculture, the average production of fish per hectare throughout the country was 2.66 MT in 2007-8 which has the potential to increase to 7 or 8 MT (DoF, 2009). Given the high potential for growth, PRICE chose to assist in this sector to increase competitiveness reaching the poor, particularly women and youth.

During 2008 PRICE conducted a sector analysis and held a series of dialogues with the stakeholders in the fish subsector to identify key constraints and analyze the potential for increasing its competitiveness. The dialogues were held with key industry players such as SME entrepreneurs, renowned aquaculture specialists, representatives from Bangladesh Frozen Food Exporters' Association (BFFEA), Bangladesh Shrimp and Fish Foundation (BSFF), Ministry of Fisheries and Livestock (MoFL) and other relevant GoB agencies like Department of Fisheries (DoF) and Export Promotion Bureau (EPB).

As a result of its value chain analysis and stakeholder interest, PRICE focused its activities in four main areas of intervention: a) improving farm productivity through better technology and inputs, b) supporting producers' forward and backward linkage to market, c) improving farmers' access to finance, and d) promoting compliance for buyers' requirement through service providers' capacity development and awareness creation throughout the value chain.

PRICE worked with fish farm associations and cooperatives, as well as with input sellers, in order to ensure maximum outreach. Memorandums of Understanding (MoUs) were developed in order to clarify PRICE's and its partners' roles and responsibilities, objectives and expectations for the interventions. The partners' share of costs for the interventions and their commitment was also ensured through these plans.

Between October and June PRICE provided assistance to five organized farming associations in Mymensingh, Pabna, Barguna and Tangail-Comilla-Noakhali districts, and one organized fish seed traders' association in Mymensingh. In the last quarter of this reporting period (July-September '09), PRICE started partnering with four new fish farmers' associations in Bogra, Rajbari-Feni-Chittagong-Madaripur areas, and with two community-based fish farming associations in Netrokona and Jamalpur. PRICE also began collaborating with a feed mill, a hatchery and an input seller company during this last quarter.

3.1.1 Improving Farm Productivity

In order to improve farm productivity it is essential for farmers to have an understanding of best practices in farming methods, techniques, farm management and quality inputs. On a cost-share basis, technical assistance and training was provided by PRICE to its partners on improved farming, feed, water and health management and access to better inputs. Assistance was provided in establishing linkages with the quality seed producing agencies, hatcheries and nurseries; training was provided on water and health management and group marketing of fish produce. PRICE has assisted four farming associations and worked closely with the

group leaders to encourage the members to share their experiences and relevant information with the fellow members. PRICE worked closely with the group leaders of four farming associations to establish more information sharing between members of the associations to build capacity of the members.

Improving farming technology

PRICE provided technical assistance to more than 3,500 farmers, 1,680 female, through the following partners:

- **TFFS** (Trisal Fish Farmers Somity) is a fish farmers' association at Trishal upazila, 25 kilometers away from the nearest district town, Mymensingh. TFSS has around 60 member farmers. A surplus of pangus (exotic Thai catfish) in 2007-8 led to a fall in its price that forced many farmers to stop farming or reduce farming areas. PRICE met with TFSS farmers and explained the cause of the market surplus, future market prospects and export possibilities through linkages with processing plants. TFSS farmers were encouraged to continue production of pangus and PRICE signed an MOU with the association to assist them with improved farming information and training.



PRICE began working with TFSS for sourcing of better seeds and for incorporating carp with pangus to control pollution. PRICE also made recommendations to the TFSS members on using inbreed-free broods from their source of origin in order to maintain healthy and increasing production. The project accompanied TFSS on two visits to Chittagong and Cox's Bazar areas to secure inbreed free carps seeds of indigenous origin and to explore export

possibilities.

TFSS farmers achieved a huge increase in their sales during FY 2009, due to increased production of both catfish and carp, as well as a rise in their price. Some TFSS members achieved record yields of 70-80 tons per hectare and are now targeting to produce up to 100 tons per hectare, with ongoing assistance from the PRICE project. TFSS is one of the project partners that will participate in a study tour to Thailand in December 2009, to observe the success of their Thai counterparts in better farming techniques and management.

- **PFPPA** (Phulpur Fish and Prawn Farmers Association) is an association of fish and prawn farmers in Phulpur Upazila, also in Mymensingh district. The association consists of 600 small holder farmers producing fish and prawn, mostly in household ponds. The farmers sell part of their produce in the local market and the rest is consumed by family, assisting basic family nutrition.

The Phulpur area is known for its excellence in aquaculture, especially carp, which draws large and medium fish farmers with capital and experience. The micro and small farmers in the area, which belonged to PFPFA, were not aware of the benefits of fish and prawn farming in small water bodies like household ponds, ditches and seasonal water bodies. PFPFA expressed an interest in working with PRICE and accordingly an MOU was signed in October 2008. The association did not have a well-functioning organizational structure and it was dominated by male farmers. Since most of production by the PFPFA members is done at the household level, there is a greater presence of women in farming activities. PRICE encouraged the association to strengthen their executive committee and organize groups with more gender equity. Accordingly, several groups were formed, including a better male to female farmer ratio. PRICE provided training to 401 farmers on improved production techniques, 144 of them female. In addition, 250 of the farmers received training on improved farm management, 77 of them female. With PRICE assistance 15 demonstration farms were established in the area to show improved farming techniques. The project also provided assistance to farmers on their own farms.

Women in the Phulpur area were particularly encouraged to attend the trainings provided by PRICE on farming in household ponds. In Bangladesh, the prevailing legal system leaves women with little or no entitlement to land property, including water bodies. Other women in PFPFA from different areas have also been facing the same entitlement-related problems. Furthermore, traditional social norms in rural Bangladesh don't allow women to go out of their house for work. For many of these women in Phulpur, attending this training was the first time that they have left their households. After the trainings, many women received control of unused household water bodies from the male family members. They cultivated fish and prawn using the improved technology and earned significant profits from the sales.

- **TMUS (Trinamool Manobik Unnayan Sangstha)** is an NGO in Shathia upazila of Pabna district involved in rural livelihoods and entrepreneurship development. The NGO has also mobilized an association of smallholder fish farmers in the area. The association has 720 members, 131 of them female. One of TMUS' representatives attended PRICE initiated stockholders workshops in July 2008 and approached PRICE to form a partnership. An MOU was signed between PRICE and TMUS in October and technical assistance was provided starting in January.

PRICE provided training on how to use improved farming technology to all of the member-farmers. Also, to demonstrate the better farming technology, PRICE assisted in organizing 20 demonstration ponds in TMUS area, seven of which were jointly conducted by family. Farmers observed the growth of fish in those ponds as a consequence of using the new farming techniques and were encouraged to follow those techniques in their own ponds. As a result, by the end of FY 2009 TMUS farmers more than doubled their production.

An aquaculture team member of TMUS also established a finfish hatchery in the area. TMUS was able to mobilize local school and madrasa (school with religious education) teachers, social workers and educated people in the area to work as fish farmers.

RDF (Rakhaing Development Foundation) has mobilized an association of fish farmers of ethnic Rakhaing origin in the Barguna district of Southwest Bengal. RDF has approximately 870 members at present. RDF was established in 1994 with the mission to



free the Rakhaing and other disadvantaged people from the poverty trap. The farmers here are mainly from the ethnic origin and were engaged in derelict method of farming before PRICE intervention. They used to allow wild fish to come in their water bodies during monsoon and harvest those in dry season. They did not give any feed to these fish, which led to a lower harvest. However, they were satisfied with natural fish grown in their ponds during monsoon and

consumed the whole harvest at home. The relation between the ethnic and Bengali people was also not very friendly.

An agreement of joint cooperation between PRICE and RDF was signed in November and PRICE began assisting RDF in January to increase productivity and improve farm management. An aquaculture specialist helped the farmers switch from derelict methods of farming to improved traditional methods of farming. 360 farmers were trained on methods to improve productivity and 20 demonstration ponds were organized to show the farmers various farming and management methods, five of which were organized by women. The farmers started to collect good quality fish seeds for cultivation and fed their fish with quality feed, recommended by PRICE. They also nursed fish seed themselves, using broods to solve the problem of weak seed.

To strengthen the organization, technical assistance and training was provided to a group of leaders in the community. There are 12 groups among the farmers in RDF. All group leaders were trained on accounts' maintenance, linkage development for micro-credit and bank loans, improvement of relations between the Rakhaings and Bengalis, etc. Several leaders thus improved their capacity and then trained many farmers, which led to a systemic change in the organized farming in the Barguna district.

With PRICE assistnace this Rakhaing-Bengali community of around 870 farmers was able to increase production and sales by 50%. They are seeing this as an evolution in their livelihoods. For further improvement, they are planning begin a different type of contract farming and horticulture production.

- **SSS** (Society for Social Services) is a leading NGO with work areas in 27 districts of Bangladesh, from Natore to Cox's Bazar. The organization is known for its excellence in working with the poor and women in rural areas. They work in diverse sectors and have their beneficiaries all over the country. They also have a big micro-credit component.



members are women. The assistance reached the farms starting in May.

PRICE provided two aquaculture specialists to train the farmers, provide technical counsel, and organize demonstration plots and result demonstration. PRICE trained 420 women farmers on improved farming technology and 480 women farmers on improved farm management.

- **Kahaloo Matshya Chashi Samoby Samity** is a fish farmers' group in Kahaloo, Bogra. The group members showed a keen interest to further develop their farming methodologies by adopting eco-friendly farming and increasing stocking density of seeds. They have 200 fish farms organized into one group. PRICE signed an MoU with them in July to provide assistance on improved fish farming with high stocking density and better farm management. They have been provided technical assistance on farming techniques since September.
- **Mourail Matshya Chashi Samoby Samity** is a fish farmers' group of 120 members in Kahaloo, Bogra. The group is comprised of small, medium and relatively large fish farmers. They showed an interest in introducing new species in farming and would like to associate with exporters who are willing to export fish to ethnic markets abroad. PRICE signed MoU with them in July to provide assistance on improved fish farming. They have been provided with an aquaculture specialist to help on farming techniques and training to farmers will begin shortly.
- **Pachpir Bazar Matsya Chashi Samoby Samity** is an association of 120 fish farmers in Kahaloo, Bogra. The farmers are scattered within an approximate 5 km radius centering on Pachpir Bazar. PRICE signed an MOU with them in July to increase production with the help of improved farming practices, introduction of new culture species and manipulation of farming methodologies. Assistance began in September 2009.
- **Nokla Motsojibi Somity**: is a community-based fish farmers' group in Sherpur. It has 300 fish farms organized into a group. They took lease of public owned water bodies of 350 acres spread across three beels (low lying depressions with perennial water bodies that expand during monsoon). These beels are suitable for community based fish farming. Traditionally the beels are guarded by the lease holders to prevent illegal poaching during

SSS contacted PRICE, with the prior knowledge of PRICE's emphasis in working with young adults and women. After a series of discussions, SSS agreed to organize household-based female farmers groups initially in four districts. A partnership agreement between SSS and PRICE was signed in February 2009. After that, the NGO has mobilized more than 1100 smallholder fish farmers into groups in Tangail, Chadpur, Comilla and Noakhali districts and assisted them in farming. All of these

the monsoon season and simply harvested during the dry season. PRICE recommended more effective management of the beels and stock rapid growing fish species to increase their income. An MoU has been signed and 150 of the farmers have been trained on improving productivity since September.

- **Bamunji Beel Motsojibi Somity** is a community-based fish farmers group in Bamunji, Jamalpur, with 120 members. They took lease of public owned water bodies of 226 acres within a beel. PRICE is providing assistance on improved fish farming in the large water body, nursing of fries to fingerlings and juveniles, and counseling on beel management and surveillance.
- **Jana Seba Kendra** is a woman-led, small NGO with its main office in Dhaka and field offices in Feni, Chittagong, Rajbari and Madaripur. JSK has experience working in agriculture. It has 900 fish farms organized into a group. PRICE signed an MoU with them to provide assistance to improve fish farming. Jana Seba Kendra organized four groups of their beneficiaries in four districts with a gender balance of 50-50. 180 of the farmers are being trained on improving farm productivity through better farm management and use of good quality seed and feed.

Improving the capacity of seed traders

Digarkanda Motshyapona Bebohashi Kollan Bhohumuki Somity (DMBKBS): PRICE signed a MoU of collaboration with this fish-seed trader's association in October. The 75 members of the associations sell their products at Digarkanda Bazar, near the Bangladesh Agriculture University, Mymensingh. These traders procure spawns, fry and fingerlings (different stages of fish seed¹) from all over the country, stock those in their respective ponds and market the products through a vibrant fish seed market owned by the association members.

Increasing the efficiency of fish feed formulation

- Bangla Fishgen

PRICE signed an agreement in February with Bangla-Fishgen, a hatchery producing organic monosex tilapia fries, to provide technical assistance to help improve its productivity. PRICE expects that Bangla Fishgen will be able to produce 16 million high quality organic monosex tilapias annually, improving farmers' access to improved tilapia seed.

- Fishtech Limited

Fishtech is an aqua farming related input seller that sells vitamins, minerals, medicine, probiotics, soil and water health improvement ingredients, with a vast network all over the country. PRICE began assisting the company in September on improved fish feed marketing and embedded information services.

¹ Spawn: the eggs of aquatic animals (as fish or oysters) that lay many small eggs; Fry: a young or small fish, fry are fish a few days old typically less than 1 inch long; Fingerlings: these are fish that are at least several months old, typically two or more inches long.

Increasing farmers' access to inbreed-free spawns

Fish farmers are experiencing a decline in fish growth and lower yields per unit area using hatchery produced seeds, compared to those using natural seeds. Fish biologists and researchers have discovered the causes of this decline in growth and identified it as an inbreeding problem. Inbreeding has become a major bottleneck for the growth of aquaculture in Bangladesh. Fish biologists estimate that using genetically corrupted seeds may cause 5-10% inferior growth of fish in successive generations. This phenomenon is rare in the wild, as thousands of males and females take part in community breeding during breeding season and the weaker individuals eventually perish.

To overcome this problem, using of natural broods is suggested. However, it is practically impossible to harvest thousands of broods from the wild and transport them, still alive to hatcheries. Also, it is suspected that natural broods of carp species, the most popular culture species of indigenous stocks, are also of poor quality, mainly due to the shortage of species in the rivers and flood carrying hatchery fish to rivers. The Halda river stock in Chittagong is recognized as the only available stock in the country confirmed to be free of inbreeding. Therefore, if seed supplies are purchased from Halda and reared to broods in confined conditions and if these raised broods are subjected to artificial breeding, then inbreed-free fish seed may be available.

- PRICE initiatives for indigenous species

PRICE has created awareness among different stakeholders about the detrimental effects of inbreeding. PRICE motivated them to use inbreed-free healthy seeds, albeit at higher prices. PRICE is providing assistance to partner hatcheries in procuring natural seeds from the Halda river and is taking the initiative to train hatchery technicians on brood development and maintenances of broods after artificial breeding to keep them free from contamination and disease. PRICE has assisted linkages to Halda River spawn sources to hatchery owners of TFFS in Trisal to procure inbreed free natural fresh water fish seed sources. PRICE also has arranged a study tour to the Halda river area for leading members of the same association (TFFS). It is expected that when different species of fish from the Halda River will be raised to brood level by hatcheries, and these broods are used repeatedly in years to come, inbreeding problem will decline gradually.

- Initiative for exotic species

Getting rid of inbreeding problem in exotic species is more difficult than that of indigenous species. As roots of exotic species do not exist in the country, they must be brought from their source of origin. Most exotic carp species were imported from Thailand and other South East Asian countries, so inbreed-free exotic carp species would need to be imported again from Thailand, Vietnam or China. PRICE will organize a trip to Thailand by late 2009 and some hatchery operators will be included in the group, so that they may assess that possibility.

3.1.2 Supporting market linkages

As the fish market is mainly limited to domestic selling, PRICE has worked on improving linkages between input suppliers, producers, processors, markets, etc. within the country. Reputed input sellers and farmers have been linked for better procurement of inputs, and the project has also helped farmers connect with buyers. In the near future, PRICE will be addressing the challenges and opportunities in accessing the international fish market.

Improving farmers' backward linkages

- Seed market

The associations PRICE works with were linked to reputable hatcheries and feed mills in the area to receive quality inputs. TFFS farmers were linked to Reliance Hatchery, Brahmaputra hatchery, BFRI hatchery etc. for good quality seeds or PL. PFPFA farmers were linked for better seeds to BFRI hatchery, Mintu hatchery, Baliya hatchery etc. TMUS farmers have been successful in reducing the cost of seeds: the farmers, as a group, purchased PL (post larvae) from hatcheries and nursed them to fry and fingerling stage and then used those for cultivation. This resulted in decreasing the cost to farmers, who used to buy fry and fingerlings from the market at a higher cost. These farmers were linked to BRAC hatchery, Chitralada hatchery and reputed nurseries in Bogra, for collecting seeds.



PRICE arranged an exposure visit for the members of DMBBS to a more organized and coordinated fish seed market at Jessore. 32 fish seed traders from Mymensing area participated in the study tour and received the opportunity to acquire first hand knowledge on the coordination and management techniques between hatcheries and nurseries. This will help enhance the capacity of the Digarkanda fish seed market to serve thousands of fish farmers with quality fish seed and diversified varieties.

- Feed market

An improved quality of feed contributes to a positive feed conversion ratio, which results in increased production at lower cost. PRICE helped its partner farmers' associations to link to reputed feed mills and feed sellers. TFFS was linked to Soudi Bangla Feed, Quality Feed, Sunny Feed, etc.

Improve farmers' forward linkages in the domestic market

PRICE organized a linkage and client identification workshop attended by 56 stakeholders in the aquaculture sector in June 2009. Sixty large aqua-farmers/traders from Trisal, Mymensingh were linked with the wholesale markets in Faridpur, which reduced the shipping time and transaction cost. Fish farmers in TMUS used to sell their fish in the local

market. PRICE helped link them to the fish markets in Bogra and Pabna. The farmers now sell chilled fish to these markets and earn higher sales and profit.

3.1.3 Improving access to finance

Productivity and competitiveness are functions of investment. Low transaction cost, easy access and reasonable cost of capital are the necessary conditions to enhance investment, thereby productivity and competitiveness. As institutional credits are difficult to access in the fish sector, PRICE initially assisted the farms in getting micro credits during the year. Organized farmers in different associations or farmers groups within NGOs were assisted by the PRICE project to establish linkages with microfinance institutions; as a result, 129 micro and small farmers took loans ranging from BDT 3,000 to 15,000, where an association or a group as a whole acted as the guarantor of the loan.

Microfinance innovation for aquaculture introduced to SSS

Micro-credits were provided to micro and small business entities, farmers and housewives within the SSS association. Installments were collected on a weekly basis from the very first week of borrowing. PRICE made SSS aware that fish farmers need a considerable amount of time to generate economic returns from farming and to be able to repay the debts. PRICE suggested a new installments payment schedule that was responsive to the farmers' cash flow, and SSS was receptive to the proposal. Successful implementation of this micro-finance system will prevent harvest of under sized fish by the farmers in order to be able to pay off their loan installments, thus enabling an increase in productivity.

3.1.4 Compliance for export and local markets

Because it is mostly sold in the domestic market, Bangladeshi fish has not been exposed to the same international scrutiny as has shrimp with regard to compliance with health, labor laws and other norms. Still, there was a recent case (April 2009) of Bangladeshi fish being recalled from the U.S. market due to potential contamination with *Salmonella*, and the need for compliance will grow as fish exports are increased.

PRICE's efforts to improve the capacity of public testing facilities are intended to benefit the export of both shrimp and fish. International consultants were hired to provide training to 38 FIQC Dhaka staff in November 2008 and 35 FIQC Dhaka staff in May 2009 on EU food safety requirements for EU compliance, as well as strengthening microbial, chemical & antibiotic and general testing procedures towards ISO 17025 certification.

In response to allegations of violation of child labor rules in the Bangladesh frozen food sector, PRICE has initiated a project with Bangladesh Shrimp and Fish Foundation to train managers and workers of 10 shrimp and fish processing firms on Bangladesh labor law of 2006, under a pilot project to improve labor practices.

PRICE has also assisted the designing of leaflets on 'responsible transportation of seed by traders and initial stocking by farmers', which will be published soon.

3.1.5 Training Summary

Trainings have been provided in two broad areas: improving technology and improving management practices. Table 3 below shows the number of trained farmers under each partner who received training under each category.

Table 3: Training in the Fish Sector

SL	Partners	Number of Farmers who received Training					
		Technology			Management		
		Male	Female	Total	Male	Female	Total
01	TFFS	60	-	60	60	-	60
02	PPPFA	257	144	401	173	77	250
03	DMBBS	75	-	75	75	-	75
04	TMUS	589	131	720			
05	RDF	188	172	360	500	398	898
06	SSS	-	420	420	-	480	480
07	Jana Seba Kendra	41	139	180			
08	Nokla Motshajibi Somity	109	41	150			
	Total	1,319	1,047	2,366	808	955	1763

3.1.6 Achievements in FY 2009

A total of 1,446 full-time equivalent jobs were created in the fish subsector through PRICE's assistance during this fiscal year, and sales increased by \$11.9 million, mostly in the domestic market. TFFS, SSS, TMUS and DMBBS were the main contributors to this total sales number, which was aided by an increase in the price of Pangash fish compared to the previous year. Sales figures would have been higher but for the late rain this year, which pushed back the crop cycle in aquaculture. PRICE partners also made new investments for \$350,000 during this period.

Table 4: Summary of Achievements in the Fish Subsector

Indicators		Achievement Accumulated to Sept '09		
		Total	Women	Men
Sales (USD)	Domestic	11.9 million	N/A	N/A
	Export	0	N/A	N/A
	Total	11.9 million	N/A	N/A
Jobs		1446	5	1441
Investment (USD)		\$350,000	N/A	N/A

3.1.7 Plans for FY 2010

In the fish sector, PRICE will work towards 1) improving productivity at farmers' level, 2) meeting local and international market standards throughout the sector, 3) establishing market linkages, and 4) improving access to finance for farmers and SMEs. The partners in the sector are mostly organized farmers' associations and input sellers. In FY 2010, PRICE will continue working with all of the project's existing partners (twelve associations) and look for new suitable partners. The project is aiming to assist over 5,000 farmers during the period.

In FY 2010, PRICE will scale up its existing interventions on improving farm productivity and deliver assistance introducing the farming integration method. PRICE will help farmers in developing year-round linkages to distant markets collectively and to seed suppliers. PRICE will also deliver technical assistance to increase compliance with domestic and international market standards by facilitating improved post harvest handling, cool chain management and testing capacity.

3.2 Shrimp

In FY 2009 total shrimp and prawn exports from Bangladesh were worth around \$353 million, down from \$445 million in FY 2008, but still the second largest export item in Bangladesh, after garments. 2009 was a difficult year for the shrimp sector because the global economic crisis affected world demand, plus cyclone Aila in May 2009 affected shrimp-producing areas. On top of this, European Union (EU) countries returned 50 container loads of shrimp over the past eight months because tests showed traces of the metabolites of banned antibiotic nitrofurans in those exports. As a result, in May Bangladesh imposed a voluntary six-month suspension on its exports of shrimp to the European Union. Thus this promising sector is experiencing several obstacles that are impeding its growth. Farmers and service providers do not have adequate knowledge about compliance with the local and international market standards. Moreover, farm production is low because of improper use of inputs, inadequate farming knowledge and poor management. Inadequate access to finance and markets also prevents production from increasing.

3.2.1 Compliance for export and local markets

Establishing a regime for improved labor practices

The Bangladesh export-oriented shrimp industry is facing a possible exclusion from the Generalized System of Preference due to an allegation by the AFL-CIO to the effect that child labor rules are being violated in Bangladeshi shrimp processing plants.

Although the allegations have not been corroborated, PRICE is working with the industry to ensure that it is fully compliant with the law. To this effect, PRICE has taken the services of Bangladesh Shrimp and Fish Foundation to train 10 processing firms under a pilot project on labor practices compliant with Bangladesh labor law of 2006. Working in coordination with the Bangladesh Frozen Foods Exporters Association, the ten firms which agreed to participate in this pilot program on labor compliance are as follows:

In Khulna:

- Sobi Fish Processing Ind. Ltd.
- Rupsha Fish & Allied Ind. Ltd.
- Fresh Foods Ltd.
- National Sea Food Ind. Ltd.
- Jalalabad Frozen Foods Ltd.
- Atlas Seafood Ltd

In Chittagong:

- Ark Sea Foods Ltd.
- Fish Preservers Ltd.

In Cox's Bazar:

- Kuliarchar Sea Foods (C'Bazar) Ltd.
- Meenhar Fisheries Ltd.

BSFF is identifying and analyzing the companies' documentation and practices related to the observance of labor legislation, including appointments, work conditions, factory policy, compensation and benefits, health care and leave policy. They are also formulating recommendations to improve procedures related to labor compliance, and drafted the training materials to impart courses to workers, managers and owners. The objective is to create awareness among the trainees about labor rights and responsibilities. In addition to the trainings, BSFF will provide technical assistance to the plants on proper worker documentation and publish posters for this. It is expected that seeing these ten pilot plants, other processing plants in Bangladesh will take their example of good labor practices and compliance in order to ensure their access to the U.S. market.

Strengthening the Official Testing Facilities

Dozens of consignments of shrimp from Bangladesh have been rejected mainly by Belgium and other European destinations because of the presence of nitrofurans metabolites, a toxic substance, in the commodity. In response, a national working committee under the leadership of the Ministry of Fisheries was formed in November 2008 and later expanded and renamed as National Action Plan (NAP) during April-May 2009.

In consultation with the government, in May BFFEA decided to voluntarily suspend the export of golda shrimp to Europe for a period of six months, while appropriate measures could be taken to address the problem.





“From the faces of the trainees I can see this training was a real success and we can face the EU delegation with confidence.” — Syed Ataur Rahman, MoFL Secretary

“This was a tremendous training, greatly helping FIQC, unveiling many things related to food safety to lead us towards the right direction of proper testing.” — Training participant Mr. Kodor, Senior Inspector, FIQC, DoF

In order to support compliance with the international market for shrimp exports, PRICE worked during this year to improve the testing and screening capabilities of the Ministry of Fisheries’ Fish Inspection and Quality Control (FIQC) laboratory staff. With the help of a high level international specialist, PRICE provided training to 38 FIQC lab staff in November and 35 FIQC lab staff in May on European Union food safety requirements, as well as for strengthening microbial, chemical & antibiotic, and general testing procedures, towards ISO 17025 certification. 100 lab operators have also been trained by eight of these trainees.

Helping to detect contaminations in exported shrimp

In support of the National Action Plan (NAP), PRICE has promoted awareness creation on



the danger of presence of nitrofurans in the produce by printing and distributing posters for all stakeholders, alerting feed industries to take measures to use inputs free from nitrofurans, and assisted feed mills in printing posters and leaflets for wide circulation about the dangers of nitrofurans.

PRICE, in collaboration with Bangladesh Fisheries Research Institute (BFRI), designed and is implementing an experiment in Cox’s Bazar to detect probable sources of nitrofurans contamination in farmed prawns

by feeding test animals with feed/ingredients suspected to contain nitrofurans. The experiment started in July 2009 and the results are expected by January 2010.

3.2.2 Improving Farm Productivity

During the fiscal year, technical assistance and training was provided to the partners to improve farming, feed, water & health management and access to better inputs, in order to increase farm productivity. PRICE worked with two subcontractors, World Fish Center (WFC) and Winrock International, to implement project interventions. Following are the details of activities carried out.

GHERS by WFC

Greater Harvest and Economic Return from Shrimp (GHERS) is a PRICE initiative to improve shrimp and prawn farming methods in Bangladesh. It is being implemented by



World Fish Center (WFC), an international research center specializing in fisheries and related aquatic resources, for a 15-month period beginning in September 2008. GHERS considers the shrimp depots as the key leverage point within the shrimp value chain because a large number of micro entrepreneurs can be assisted through working with them. GHERS directly supports six depots in Khulna, Bagerhat area with technology and personnel to build

their capacity to integrate the stakeholders, particularly for ensuring the transfer of technical knowledge and skills to farmer groups.

GHERS has a mandate to promote the technology developed within two previous USAID projects, viz. Shrimp Seal of Quality (SSOQ), implemented by ATDP II, and Shrimp Quality Support Project (SQSP), implemented by World Fish Center for enhancing farm level productivity. In addition, GHERS will also provide assistance to smallholder farmer groups with synchronized harvesting. The quantity produced by any individual smallholder farm is quite small and lacks economies of scale, resulting in increased transaction costs and reduced competitive advantages. GHERS will assist the groups to organize and coordinate timely harvesting and bulk supply of shrimp to depots. The volume enhances their bargaining strength, price and profitability.

GHERS has been partnering with the following six depots to carry out its interventions:

Depot	Location	No. of farmers
Renaissance Enterprise	Chitolmari, Bagerhat	815
Sarker Enterprise	Bagerhat Sadar	500
Prime Fish	Kachua, Bagerhat	240
Ziko Fish	Paikgaccha, Khulna	385
Janata Fish Traders	Paikgaccha, Khulna	406
Padma Fish	Kaliganj, Shatkhira	400

Each of the depots appointed two extension facilitators (EF), who received a 4-day long foundation training and a Training of Trainers (TOT) course on shrimp culture. The key objective of the training was to develop capacities of EFs on improved shrimp farming technologies and extension facilitation activities. The EFs have also been provided with field-based, hands-on training about the GHERS monitoring and survey activities, as well as data collection methods and techniques.



Photo 2: CST farmer sticking screened PLs

The trained EFs then mobilized 2,752 smallholder shrimp farmers into 116 groups (each group constitutes 24 farmers on average). The extension facilitators disseminated the knowledge and skill on improved shrimp farming techniques to all these farmers, of which approximately 450 were female. All of them received trainings and counseling on improved and relatively high density farming methods with screened post larvae.

Initial farming preparation was partially destroyed by the cyclone Aila at the end of

May, however, by the end of August all farmers had restocked their ponds with screened PL. Farmers in some areas have already started harvesting.

Contract growing for higher productivity

PRICE is promoting contract growing as one of the best ways to improve productivity and compliance in shrimp production. Contract growing refers to the arrangement between the farmers (contract growers) and sponsor contractor, under which the sponsor provides farming support to the contract growers and, in turn, the farmers agree to sell their produce to the contractor at the market or a predetermined price. The sponsor's incentive is that he gets a guaranteed supply of quality crop at a market or previously specified price. On the other hand, the farmers is assured supply of inputs, knowledge and information on improved cultivation practices, higher yield, guaranteed sales at market price, etc. In this way, the contract growing system generates a win-win situation, benefiting all the parties involved.

PRICE discussed with different value chain actors their interest in sponsoring contract growing. At the processor level, it was found that they are far too away from the farmers to conduct such a system. However, one processor agreed to partner with PRICE in a pilot contract growing scheme. At the agents' (wholesaler) level, no one yet has shown an interest in contract growing. The entrepreneurs most amenable to investing in a contract growing scheme have been the depot owners, of which PRICE is currently collaborating with six. Thus, starting from April 2009 PRICE is providing technical assistance for the implementation of a total of seven contract growing systems in the shrimp subsector. All of the partners are located in southwestern Bangladesh, involving around 2,000 farmers.

Depot owners usually provide loans (*dadon*) to farmers in exchange for farmed shrimps. However, the depot owners were not able to ensure that the loans were being used for shrimp production only, or for quality inputs. Thus they did not always receive the expected quantity of shrimp from the farmers. Moreover, the quality of farmed shrimp has always been an issue. The main reasons for poor quality are a lack of uniform grades in supply, lack of traceability of the production, poor handling of PLs and shrimps during transportation, and the use of bad quality inputs.



Under contract growing, the depot owners (contractors) were able to address some of these issues because the farmers were provided with inputs, instead of cash. To increase farmers' productivity, the contractors provided training on increasing productivity and improving farm management. Moreover, the quality of produced shrimp improved with the use of better inputs. The out growers have been encouraged to use screened (tested for virus) PL, hatchery PL, and traceable feeds and fertilizers, which allows for better traceability in shrimp. After production,

farmers are ensured of sales, as the contractor will buy the whole production from them.

Since June, PRICE has been promoting contract farming efforts in the Khulna-Bagerhat-Jessore area with the Mofa Fish processing plant, as well as with the Din Bijoy Enterprise, Vairob Fish, and Raju Enterprise depots. The detail of that activity is set forth below. Towards the end of the reporting period three more depots were added to this effort: Modina Fish, Mondal Fish and Satata Fish, but activities with them have not yet started.

- Din Bijoy Enterprise

A newly established shrimp depot in Hoderhat, Bagerhat, PRICE signed an MoU with them in March to establish a contract growing system involving around 1000 shrimp farmers (bagda and golda), divided into 40 groups. The partner was linked to the sources of screened PL, quality grade feed sources and other inputs. Five shrimp experts were hired on a cost-sharing basis: PRICE supported one aquaculture consultant and two technical supervisors and the partner hired two technical experts to render services to all 1000 farmers. The pool of experts started providing productivity training to farmers in June and assistance on implementing a contract farming system. Three demonstration ponds for golda farming and two demonstration ponds for bagda farming were established. Din Bijoy Enterprise provided the farmers with improved inputs, including screened PL and quality feed.

- Vairob Fish Agency (VFA)

VFA is a brood supplier, PL trader and depot owner in Fakirhat, Bagerhat. In May they signed an MoU with PRICE to get assistance on conducting contract growing in bagda and golda shrimp. The contract farming effort covers 600 acres of land, with around 360 farmers. The farming structure was bagda-golda-finfish. PRICE provided VFA with one aquaculture specialist and one field supervisor and VFA provided a supervisor level employee. The combined force of these three shrimp experts are engaged to learn specific contract growing and shrimp farming instructions and pass the instructions on to the farmers. So far 140 farmers have been trained on improving productivity through the contract growing system. Two demonstration ponds were established to show the improved farming methods and their practical benefits. The contractor arranged for obtaining PL for the farmers from reputed hatcheries, and farmers were also assisted in finding good sources of feed.

- Raju Enterprise

Raju Enterprise is a depot in Dakope, Khulna. They signed an MOU with PRICE in April for facilitation in contract growing with around 300 farmers. Raju felt that they had sufficient experiences in bagda farming and initially sought assistance in polyculture-based golda and non-carnivore fish farming, under the contract farming system. The farming involved polyculture of prawn and plankton feeding non-carnivore fish. Initially technical support involved prawn farming only. PRICE provided support to the 300 farmers (30 of them female) on specific farm management, productivity and contract farming issues. The contractor provided farmers with quality PLs. Due to the later harvest of golda in the season, compared to bagda, Raju Enterprise is yet to achieve any positive outcome in their sales. On top of that, cyclone Aila in May 2009 destroyed part of their production.

- Mofa Fish Processing Ltd.



Mofa is a fish processing plant in Jessore with over three decades of experience, including export of two consignments to Korea and Japan. In order to increase the productivity of farmers, as well as to ensure quality production, Mofa Fish decided to begin contract growing. PRICE signed an MoU with Mofa in April to establish a contract growing system involving around 40 shrimp farmers in 90 acres. In June PRICE provided training to farmers on ways to improve

productivity in shrimp farming in a polyculture system which includes fresh water prawn and non-carnivore plankton-feeding fin fish. The contracted farmers received input supports including PL, feed and medicine from Mofa Fish for golda farming only. Technical assistance through training and counseling involved both fish and prawn.

Assisting a medium farm for higher productivity

Gazi Fish Ltd is the largest semi-intensive shrimp farming company in Bangladesh that exclusively works in the bagda subsector. In 2008 Gazi Fish produced roughly 60 metric tons (500 kg/acre) of bagda shrimp and 70 million shrimp post larvae. The Nauplii of shrimp is tested for white spot virus in a polymerase chain reaction (PCR) lab located in Cox's Bazar, and then shipped to Khulna, where they are nursed to PL stages. Consisting of 87 ponds, the total area of the farm spans 103 acres and staffs approximately 100 people. Using improved inputs for shrimp production to produce higher yields, Gazi Fish supplies shrimp to four processing plants in Khulna and bagda PLs to numerous farmers. Despite its high yields relative to the Bangladesh average, Gazi Fish's productivity is still low compared to that of Thailand, Vietnam and India.

Gazi Fish signed an MoU with PRICE in March for assistance on improving farm management and productivity. As part of the initiative, PRICE provided an aquaculture

specialist to train the farm's staff in these target areas. However, on May 29, 2009, Cyclone Aila destroyed much of Gazi Fish's shrimp stock. With PRICE's assistance, the company was able to recover most of its costs and even successfully increase its farm productivity, from 1,350 kg of shrimp per hectare per production cycle, to 1,438 kg of shrimp per hectare per cycle. With PRICE support, Gazi Fish is also in the process of implementing a second production cycle, which would bring total yields to close to 2,500 kg per hectare per year, more than ten times the national average of bagda production.

PRICE considers working with Gazi Fish as an opportunity to promote a traceable process across the value chain, since it produces its own PL, buys feed from a selected feed mill, and sells grown shrimp to selected processing plants in sufficient volumes to fill multiple containers. Gazi sells their produced PLs to approximately 4000 to 5000 farmers every year, and can therefore deliver embedded information service on improved farming to these farmers. In addition, Gazi Fish is looking into the possibility of procuring their own PCR testing facility, which would expand the national availability of screened PL for farmers.

Use of Better inputs in farming

- Promoting screened PL in farming

The prevalence of White Spot Syndrome Virus (WSSV) is a major cause for the high mortality rate in shrimp, resulting in low productivity of shrimp farming. To address this problem, PRICE/WFC (GHERS) has taken the initiative to promote the supply and stocking of shrimp post larvae (PL) that have been screened for this disease, for its group member-farmers. Initially GHERS planned to provide roughly 25 million screened PL to around 2600 farmers in greater Khulna.

The planned activities were to collect orders from farmers, compile and place the order to hatcheries, receive the delivery of tested PL from hatcheries, transport those to the depots and then distribute those to the farmers under those depots. Accordingly, Pranti, a commercial PCR (polymerase chain reaction) Lab operator in Cox's Bazar, was contracted to supply the tested PL to the hatcheries. Pranti Lab started working with 4 hatcheries in Cox's Bazar by providing brood, Nauplii and PL testing. However, this effort was disrupted by cyclone Aila that hit the south-western part of Bangladesh in May 2009. Hundreds of farmers' ponds were washed away by the cyclone. GHERS has assisted to restock the damaged farms with tested/screened PLs. Harvesting of shrimp has started in some of the farms.

- Use of hatchery PL in farming

In Bangladesh there is a huge demand of golda PL, estimated at about 1.2 billion in 2008. Falling short of the demand, Bangladesh hatcheries were only able to supply 190 to 200 million golda PLs. Although the PLs collected from rivers meet a portion of the demand, it is not an optimal source, as it is harmful for maintaining biodiversity. Given this, in 2007 the Bangladesh Government banned the collection of shrimp PL from the coastal areas, enhancing the need to encourage hatchery PL for farming. In addition, usage of hatchery PL instead of wild PL will improve traceability of production, which is required for exporting shrimp abroad.

To promote the use of hatchery PL, PRICE began work to strengthen the production capacity of hatcheries. In April PRICE signed an MoU with the newly established Aqua Star Hatchery that produces golda PL in Rupsha and Khulna. Aqua Star required expertise on brood management techniques and sought out consultants with experience and skill in golda PL production who would train their staff in the first cycle of production to be independently able to conduct operations at the start of the second cycle. With PRICE assistance, Aqua Star was able to improve brood management techniques, high density PL rearing techniques and efficient management system for cost effective PL production. In the first cycle Aqua Star produced 3.5 million PLs and sold all of those by July. This production enabled hundreds of farmers to access high quality hatchery PLs for golda farming.

- Use of improved feed

Poor quality feed is prevalent in Bangladesh and not only affects productivity, but is also a likely source of the antibiotic contamination that led to the voluntarily restriction on golda exports to Europe for six months, beginning in May 2009. Among other initiatives, PRICE is addressing this issue through the promotion of improved feed production and its use among shrimp farmers. For that, PRICE has been working with two feed mills in the Khulna area:

North Khulna Poultry and Fish Feed is a feed mill in Dumuria, Khulna. They realized the potential to increase sales through two mechanisms: improving the feed quality and creating awareness among farmers about using good feed for safer production. North Khulna Feed showed interest to work with PRICE on quality feed formulation and training of their dealers and agents on improved farming techniques so that they can provide embedded services to farmers and also increase their own sales. After signing a cost-share MOU with North Khulna Feed in March, PRICE provided assistance on nutrition issues and helped the company to improve the quality of its feed. In addition, PRICE helped train 120 North Khulna Feed dealers to promote their feed. The dealers in turn selected 750 farmers who were buyers of their feed to be trained under the same training for knowledge sharing.

Another feed mill in Khulna, Satkhira Feed Industries Ltd., also started working with PRICE beginning in July. PRICE facilitated in improving the capacity of their marketing staff by providing embedded services to the buyer farmers.

3.2.3 Supporting market linkages

Farmers usually sell their products individually, which leads to lower prices and revenue. Training the farmers about the benefits of group sales, PRICE facilitated the group selling of products through contract growing efforts and GHERS. The assisted farmers sold their product to depot owners and earned higher revenue. The depot owners were also instructed to link with the agents and processors for selling their purchased shrimp.

For procurement of inputs from the market, farmers were also assisted to use a group procurement method, which helped them purchase high quality inputs at lower prices. Farmers were also linked to the source of good quality inputs, like screened PL and hatchery PL for traceable production.

3.2.4 Improving access to finance

The shrimp farmers in the greater Khulna-Jessore area were able to finance the cost of their inputs in production (feed, seed and fertilizer) through the contract growing systems facilitated by PRICE. Previously, the farmers had to use their own funds or request credit from the input sellers.

3.2.5 Training Summary

Trainings have been provided under three categories: workforce development, improved technology, and improved management practices, as summarized in Table 5:

Table 5: Training in Shrimp
Number of trainees

SL	Partners	Workforce			Technology			Management		
		M	F	T	M	F	T	M	F	T
01.	GHERS-WFC	144	01	145	119	07	126	32	02	34
02.	DB Enterprise				907	83	990			
03.	Vairob Fish				140	-	140			
04.	Raju Enterprise				270	30	300			
05.	Mofa Fish				50	-	50			
06.	Modina Mastshya Prokolpo				62	-	62			
07.	Satkhira Feed Industry Ltd.				31	-	31			
08.	Satata Fish				23	07	30			
09.	Mondal Fish				26	04	30			
10.	North Khulna Feed Mill	750	-	750						
11.	DOF	72	09	81						
	Total (Shrimp)	966	10	976	1,628	131	1,759	32	02	34

3.2.6 Accomplishments in FY 2009

With a combined export sales increase of USD 0.48 million during FY 2009, the shrimp and prawn subsector consisting of Gazi Fish, Din Bijoy Enterprises, Vairob Fish and Mofa Fish achieved positive growth through their partnership with PRICE. PRICE was also successful in helping the Aqua Star Hatchery produce PLs during its first cycle of operations.

Table 6 shows the Shrimp subsector's key achievements during the quarter:

Table 6: Summary of Achievements in Shrimp

Indicators		Achievement Accumulated to Sept '09		
		Total	Women	Men
Sales (USD)	Domestic	0.05 million	N/A	N/A
	Export	0.43 million	N/A	N/A
	Total	0.48 million	N/A	N/A
Jobs		25	0	25
Investment (USD)		6,000	N/A	N/A

3.2.7 Plans for FY 2010

In the coming year PRICE will continue working to increase farm productivity through technical training and assistance, and through the promotion of outgrowing schemes, either directly or through its implementing partners. We will continue to promote traceability and the use of quality and safe inputs, including screened PL. PRICE will also continue to assist the industry and the GOB with labor law and food security compliance issues by providing relevant training in processing plants and in laboratories.

4. Leather

Leather and leather products are an important export oriented industry in Bangladesh. In terms of export revenue, leather currently ranks 4th in the country, with approximately USD 400 million in exports. The sector is very dynamic and its frontiers are changing rapidly. The export statistics for 2008-09 FY show a major shift in export items: while the crust and finished leather experienced a major slump, the manufactured items like footwear (10% growth), bags and other goods (90% growth) showed marked improvement. As a matter of fact, this is the first time in the history of Bangladesh that revenue from the export of leather products exceeded that of leather.

The growth of Bangladesh's leather sector is in large part due to the strong SME linkages. More than 90% of value addition comes from local sources, with over 800,000 people and 2,000 SMEs participating in value adding activities.

The opportunities for pro-poor impacts in this sector are significant, given the participation level of women, youth and ethnic groups. As leather is an export-focused industry, quality, social and environmental compliances are key issues for enhanced market access. On the supply side, the issues are the availability of skilled hide flayers, sewing and cutting operators, and the use of improved storing and processing equipments and techniques.

In August 2008 PRICE conducted a stakeholder's workshop to have the inputs on productive interventions in the sector. The workshop was attended by key industry players, SME entrepreneurs, renowned leather sector specialists/academicians, representatives from donors,

Leather goods and Footwear Manufacturers and Exporters Association of Bangladesh (LFMEAB), BLSC, Ministry of Commerce and other relevant GOB agencies, including EPB. In addition, PRICE also conducted a series of one-on-one meetings with key industry players.

The following sections describe the main activities carried out during the reporting period:

4.1 Hide Flaying Campaign

In Dhaka city over 500,000 cows are slaughtered annually, 20-30% of them during the festival of *Qurbani*. These hides are either exported as raw materials or used as the main input in finished and semi-finished leather products. Owing to improper flaying practices, these hides are of low quality and thus earn reduced prices in the final market. In order to improve the quality of hides, PRICE arranged an awareness campaign and training workshops for butchers just before the *Qurbani* festival which ran from 20 November to 8 December.

To communicate with amateur flayers, workshops were conducted in slaughterhouses and road-shows were conducted in the cattle-*haats* and places where crowds gathered. In most cases the butchers were not skilled or aware of the importance and value of proper flaying. Demonstration workshops and presentations were conducted in the 10 busiest slaughterhouses: Kaptan Bazar, Mirpur 11, Mohakhali Kacha Bazar, Hazaribagh, Mohammadpur Krishi Market, Mohammadpur Town Hall, Lalbagh Kellar Mor Bazar, HAtirpul Bazar, Mirpur Shahid Budhdijibi and Nababganj. The demonstrations were followed by a power point presentation, question and answer session and distribution of folders and manuals. 539 flayers and slaughtering assistants were given instruction through these workshops.



Another approach PRICE used to reach out to the target groups was to visit cow-*haats* (a temporary cattle market established before *Qurbani*). During the *Qurbani* season, cow-*haats* regularly become a meeting place for various individuals who participate in the slaughtering and flaying of cows. These road shows were conducted in 15 cattle-*haats* divided in 3 zones for 5 days around the area of Uttara, Khilkhet, Banani, Gulshan, Badda, Mohakhali, Rampura, Gabtoli, Indira Road, Mohammadpur, Shamoli, Kalyanpur, Agargaon, Dhanmondi, Kawranbazar, Azimpur, Jatrabari, Khilgaon, Mugda, Basabo, Tejgaon, Hazaribagh and Kamalapur.

The road shows were also conducted in bazaars and tea-stalls. The activities carried out in the road-shows included *baul* song performances, a catchy form of song popular among the class butchers generally belong to, and the distribution of leaflets. The lyrics of the *baul* songs communicated the proper method of slaughtering and flaying, and the benefits of following those methods. Each of the three zones had six *bauls* performing for the road show. Nine songs were composed for the road show with 2-3 songs sung in every spot by turn.

During the last part of the road shows a total of 100,000 leaflets were distributed to educate the audience about the correct flaying methods and the benefits of applying this method.



“Nobody has ever trained us like this before. This training will be helpful for us, as leather is a valuable national asset. From now on we will work more carefully. If the skin is damaged during flaying, its selling price becomes lower. That brings us lower profits.” — Training participant Omar Faruq

4.2 Developing skilled shoe sewing & cutting operators

Training at Bhairov Training Centre (BTC)

One of the major capacity constraints in the leather sector is the lack of available skilled workers, time and resources required to train new workers, and the high turnover among the existing workforce. For example, with the largest in-house production facility, Apex Adelchi Footwear was in need of 500 new workers every month to meet existing and new orders. Under an MOU signed between Apex Adelchi Footwear and PRICE, skills trainings for 300 employees were started in the beginning of November and ended in February. The three months long course trained 271 women and 29 young males. This was a cost-sharing initiative where PRICE contributed 56% of the costs to cover the expatriate technical expert, training supervisors, trainee allowances and other expenses in addition to Apex’s 46% contribution to cover the cost of materials and relocation. Participants came from Bhatarchair and Belabo in the Narsinghdi district. Per the MOU, the trained personnel would later be offered jobs at Apex Adhelchi Limited.

The training was offered through the service provider Bhairov Training Centre (BTC) located in Belabo, Narsinghdi. The centre previously trained 700 women and young males for Inani Footwear under a CIDA-funded project, Local Enterprise Investment Centre (LEIC). PRICE approved the previously developed training module and lesson plans to train its 300 participants, selected jointly by Apex and BTC. BTC hired Mr. Ranjit Mukherji, an expatriate technical expert for conducting this training event. Mr. Mukharji is a resident of the Indian state of West Bengal and a native Bangla-speaker. He brings years of experience in footwear production and export operation from his work with reputed Indian companies: viz. Taj



Group, Tata Export, Faridabad and others. He also worked as a footwear production trainer in Apex Adhechi and other footwear manufacturing companies in Bangladesh.



The training was regularly monitored by PRICE's Business Advisor and Training Manager to check the workability of the machines, selection and attendance of the trainees, and duration of training. Upon completion of the training the trainees were given an evaluation exam, certificate of completion, and ceremony.

At the end of March, 62 of the trained women joined Bangladesh Foot Wear Ltd.

Training at Technical Training Center(TTC), Tangail:

A public-private partnership was established between PRICE, Apex Adelchi and the Bureau of Manpower, Employment and Training to train 3,000 poor women and young adults. The courses started in March and 223 people have already completed their training (Male-176, Female-47). Another 57 (M-37, F-20) are expected to pass by November. Most received job offers from various industries, with a particular emphasis from footwear units. The trained graduates from the center are expected to render their services to leather goods and footwear manufacturers, traders, exporters and other actors across the value chain.



4.3 Strengthening the Bangladesh Leather Service Center (BLSC)

The Bangladesh Leather Service Center is a corporate component of the Leather Sector Business Promotion Council (LSBPC). It started operations in March 2006 with an office at the Bangladesh College of Leather Technology (BCLT), Dhaka. The International Trade Centre (ITC Geneva) and the Government of Italy provided funding support to BLSC to upgrade quality testing services and ensure certification, train operators and trainers, support design and development, as well as improve international market intelligence and marketing.

In March, representatives from ITC and from BLSC proposed PRICE to work jointly for the development of the leather sector. They also informed PRICE that they had obtained accreditation for the BCLT testing lab for 18 chemical and physical tests for leather and leather products, from the National Accreditation Board for Laboratories (NABL) in India, which is a member of the International Laboratories Accreditation Cooperation (ILAC). As the BCLT lab offers commercial testing services and international accreditation to local tanners and leather product processors, it makes it easier for local producers to comply with the requirements of international buyers.



PRICE noted the importance of BLSC as a service provider for the industry, and offered to collaborate with it in its efforts to provide quality testing, as well as workforce capacity building. PRICE is in the process of preparing an MoU with LSBPC to assist them in organizing a skill enhancement program for SME entrepreneurs and management staff. In addition, PRICE will also assist them in organizing promotional workshops for their lab facility, where sector players are encouraged to leverage more resources.

4.4 Linkages with International Markets

PRICE has started the ground work to support a selected group of innovative SME entrepreneurs to attend international leather fairs. PRICE interviewed a group of potential participants for the MIPEL Leather Bag Fair in Milan, Italy in 2010. Each business was assessed in terms of design and skill development, and readiness for the fair. However, after conducting a focus group discussion with the SMEs, it was found that they were not ready to participate in such a sophisticated fair. Rather, they opted to participate in smaller – local and regional fairs - to prepare themselves for the broader market. PRICE is working with these entrepreneurs in preparation for participation in these types of fairs.

4.5 Assisting sector players in collaboration with the association

PRICE initiated a dialogue with the *Leather Goods and Footwear Manufacturing and Exporters Association of Bangladesh* (LFMEAB) to provide assistance in the areas of developing/enhancing skills of workers (new and existing), strengthening SMEs as sub contractors for lead manufacturers, and enhancing market linkages. During one of its quarterly meetings the LFMEAB invited its members to participate and contribute in the workforce development initiative to support the whole sector. In September an MoU was signed with LFMEAB and the progress made thus far includes:

- Apex Adelchi (AAFL) responded to the Association’s call and came up with a proposition to develop approximately 800 new workers for the footwear industry in a pilot for one year. LFMEAB approached PRICE and acted as a bridge between AAFL and PRICE. AAFL agreed to provide the majority of resources, such as machinery/tools, expertise, training materials and space for this initiative. LFMEAB shall act as the lead coordinator of the entire project, ensuring the initiative is implemented in a timely manner. LFMEAB will also coordinate that this newly trained skilled workforce can be absorbed throughout the subsectors, i.e. footwear and goods, thus allowing more companies within the industry to grow. LFMEAB ensures that AAFL retains the right of priority (as they will share a significant portion of the expenses) in offering jobs to minimum 75% of the trained workforce, keeping the provisions for other members who will participate and contribute to expenses in this initiative to get access to the remaining 25%. The MoU is expected to be signed in December 2009.

- PRICE will leverage the resources of another LFMEAB member - Jenny's Shoes Ltd. - to provide machinery, raw materials, office space and staff to develop the skills of approximately 150 new workers who will be offered a job by Jenny's Shoes and other members of LFMEAB. PRICE will also conduct a Training of Trainers program to develop the skills of 14 trainers that will have the capacity to continue training new workers for the entire sector. An MoU is expected to be signed in November 2009.
- PRICE is in a dialogue with Bata Shoe Company, member of LFMEAB, to support their SME subcontractors in the backward linkage. The workers and management of SMEs will be given training in production techniques, efficiency, etc. PRICE is teaming up with Bata to create a group (approximately 200 people) of new footwear sales personnel by providing training in the area of product knowledge, inventory and salesmanship. An MoU is expected to be signed the first quarter of 2010.

4.6 Creating a pool of consultants/trainers for the sector

To cater better service across the sector, PRICE has initiated an effort to identify existing quality service providers (SP) in the market. 15 applications were received and after a formal interview, a pool of 10 consultants was created. PRICE will support these consultants for about 2 years to position them in the market as SPs so that the sector players can hire them in the future for fees. PRICE will initially engage them in various assignments so that they can develop themselves. The first assignment is expected to be given to them in November 2009.

4.7 Assisting a community in collaboration with Bangladesh Association for Social Advancement (BASA)

Bangladesh Association for Social Advancement (BASA) is a local NGO which offers help to the rural poor, disadvantaged women and vulnerable people for their economic development. It has a network of more than 50,000 people and offers a variety of training courses on income generating activities and human resource development. Considering the growth and potential of the leather sector, BASA applied for PRICE assistance in a pilot to develop new workforce abilities for the members of their communities, linking them with the industry for job creation. The MoU is expected to be signed in November 2009.

4.8 Training Summary

Trainings have been provided in three categories: workforce development, improved technology, and improved management practices.

Table 7: Number of people trained in the Leather sector

S/L	Partners	Workforce			Technology			Management		
		M	F	T	M	F	T	M	F	T
01.	Market Access				573	-	573			
02	BTC	29	271	300				02	02	04

03.	BMET-TTC- APEX	176	47	223						
Total		205	318	523	573	-	573	02	02	04

4.9 Accomplishments in FY 2009

In FY 2009 PRICE helped to increase Bangladesh's leather domestic sales by \$200,000. Through workforce development efforts, PRICE assisted in the creation of a skilled workforce in the footwear manufacturing industry that allowed many people access to employment opportunities. Apex Adelchi Footwear, Bay's Footwear and Bangladesh Footwear Ltd. have increased their sales by employing such labor. In total, 127 full time jobs were created during this period, 79 of which were occupied by female staff. PRICE has facilitated the increased investment of \$43,000 in the sector.

Table 8: Summary of Achievements in Leather

Indicators		Achievement Accumulated to Sept '09		
		Total	Women	Men
Sales (USD)	Domestic	200,000	N/A	N/A
	Export	0	N/A	N/A
	Total	200,000	N/A	N/A
Jobs		127	79	48
Investment (USD)		43,000	N/A	N/A

4.10 Plans for FY 2010

To assist the sector in obtaining a regular supply of skilled workers and to upgrade the existing workforce in the leather sector, PRICE will partner with the leather goods manufacturers' associations and their members by leveraging their resources such as machineries/tools, factory premises and experts.

As many enterprises use old machineries and processes that lead to lower productivity, PRICE will launch pilot projects to upgrade processes and partner businesses with SMEs. Field trips for SMEs will be arranged to allow them to see the better business practices. PRICE will also support SME entrepreneurs in closing new contacts with more buyers and will work with financial institutions and SMEs to initiate dialogues for better mutual understanding of risks and opportunities.

The ultimate quality and commercial value of finished leather depends on the quality of raw hides and skins. PRICE will continue its efforts to raising awareness and sense of national responsibility among the flayers and the consumers who sacrifice cattle during Eid.

5. Assessment of DCA Financing Opportunities

During the month of September PRICE conducted a study to identify constraints and possible solutions for increasing access to finance for the shrimp and prawn industry, the horticulture production and processing industry, and the leather products industry. The following tasks were undertaken as part of this study:

- The compilation of information and materials on investment opportunities in PRICE target sectors, and an explanation of how DCA partial guarantees might complement market entry for financial institutions.
- Interviews with bank and non-bank financial institutions identified as likely to be interested in value chain financing activities for one or more of the three sectors.
- A preliminary evaluation of the strategies, capacity, and interest of local financial institutions to lend to projects in these sectors directly, through existing MFIs, or other channels and their appropriateness as potential partners for use of USAID DCA guarantees.
- Meetings with technical assistance and/or other potential PRICE project partners including IFC (formerly SEDF), Winrock, KATALYST, and the SME Foundation.
- DCA-relevant information gathering from value chain aggregators, processors and major buyers in the three sectors.

Among the recommendations that emerged from this study are the following:

- As part of a value chain finance mapping and analysis exercise, PRICE should identify specific financial product/service demand for seasonal and cyclical loan products based on the cash flow cycles of SMEs in aquaculture, horticulture and leather manufacturing.
- PRICE should document financing needs by its clients that may best be served by leasing rather than loan financing. PRICE can maintain regular communications with the IFC about progress they are making with the tax authority on leasing, and could meet with United Leasing Company to see if a strategic partnership – including a DCA guarantee or not – makes sense to serve PRICE clients in the Bogra or other areas.
- PRICE could coordinate with DFID’s Market Development Program (MDP), operated by Winrock, on expanding contractor outgrower financing to PRICE sectors. There seems to be a particular opportunity to work together in the case of shrimp.
- If USAID/B decides to pursue an SME finance guarantee facility that is structured as a Loan Portfolio Guarantee, the total overall risk score (and thereby the subsidy cost) can be reduced by selecting strong partner lenders. To achieve PRICE’s targets, in addition to creating a longer term market demonstration effect to sustainably increase lending to SMEs in PRICE sectors, it is recommended that USAID partner with multiple (no less than 3) financial institutions for any planned facility.

6. Equity Integration

PRICE has taken targeted interventions in the selected sectors to address the challenge of equitable economic growth for marginalized groups including the poor, women and youth.

As women are a marginalized group of workers in Bangladesh, changes in the trade scenario often have serious effects on women. For example, after the EU ban on shrimp from Bangladesh, women who worked in shrimp processing found themselves denied of permanent employment because of the fluctuating demand of shrimp, and at worst, unemployed.

Paying special attention to the selection of its partners, PRICE works with associations with large numbers of MSMEs, ethnic minority groups, and those represented by women entrepreneurs. Through the Aquaculture sector, PRICE currently works with over 9,000 micro, small, and medium enterprises, and will gradually expand its activities with pro-poor institutions such as RDF, TMUS, SSS, Proshika and BRAC to better reach poor women, youth and marginalized groups with job enhancement training. Through PRICE's two partners in horticulture, Syngenta Bangladesh and Lal Teer Seeds, PRICE has reached around 60,000 MSME beneficiaries throughout Bangladesh.

PRICE's interventions have included women working in the three sectors through training and technical assistance on farming technology, management, and workforce development. During the 2009 fiscal year PRICE assisted 1,922 women on improved technology. 419 women received assistance on improved management practices and 466 women received workforce development training in the three sectors. In addition, PRICE has also provided assistance to establish credit linkages to 64 women in ethnic minority groups. Through these means, these women are expected to have higher productivity rates, better management skills, and thereby higher income and employment opportunities.

ANNEX 1

PERFORMANCE INDICATORS

FY '09 Performance PRICE

Custom Indicator 1: Total value of sales increased				
Target till Dec 2009	Result till Sept 2009	Explanation on result so far	Target 2010	Target 2011
15,200,000	\$ 12,700,000	Due to prevailing global economic crisis and compliance issues in case of shrimp, the sectors of aquaculture, horticulture and leather products posted a negative export growth past year by around 15%, 26% and 18% respectively. Despite this, good sales and higher price of fish and vegetables destined for the domestic market allowed PRICE to accomplish 85% of its target. PRICE is proposing high targets for 2010 and 2011, as project under the program element ramps up its activities by extending outreach to more SMEs and associations. Moreover, for the leather sector there was a delay in identifying beneficiaries, and subsequent leather sector global economic situation has started to improve.	\$ 40 million	\$ 60 million
Custom Indicator 2: Total number of full-time jobs created				
Target till Dec 2009	Result till Sept 2009	Explanation on result so far	Target 2010	Target 2011
5,200	1,658	The impact of the global recession played a major role for this under achievement. During 2010 and 2011 we are planning to extend our outreach to a much larger number of SMEs and associations, which will allow us to significantly improve our ability to assist in the creation of new jobs. We also expect more jobs to be generated among our beneficiaries that export, as the global economy recovers.	10,000	12,105
Custom Indicator 3: Total value of investment increased				
Target till Dec 2009	Result till Sept 2009	Explanation on result so far	Target 2010	Target 2011
600,000	\$ 520,000	The slight under achievement (87% of target), was due largely to the difficult economic situation, which made it less attractive for the firms to invest. For 2010 and 2011 we propose to double our results in this areas, as we increase our outreach to many more MSMEs and associations and the economic situation improves.	\$ 1 million	\$ 1 million
Custom Indicator 4: Number of persons participating in USAID workforce development programs				
Target till Dec 2009	Result till Sept 2009	Explanation on result so far	Target 2010	Target 2011
2,800	1,616	This was also influenced by the global economic crisis. Due to forecasted sales loss, the economic agents were not interested to invest in workforce development.	4000	4200
Custom Indicator 5: Percentage of processing firms compliant with local labor laws				
Target till Dec 2009	Result till Sept 2009	Explanation on result so far	Target 2010	Target 2011
10%	Not Known			
Remarks: Proposed to USAID for replacement with new and relevant indicator.				

Common Indicator 1: Number of firms receiving USG assistance to improve management practices				
Target till Dec 2009	Result till Sept 2009	Explanation on result so far	Target 2010	Target 2011
1750	2,489	PRICE provided training on improved management practices to a much higher number of small and micro enterprises (SMEs) than originally targeted. This occurred both in the horticulture and in the aquaculture sectors, where PRICE worked with local as well as regional associations to benefit a large numbers of associated firms. The fish and vegetable market, being mostly domestic, was not hurt by the global economic downturn that affected many other export products. In 2010 and 2011 PRICE will continue assisting SMEs to improve their management practices, whether they produce for the domestic or for export markets.	2,000	2,000
Common Indicator 2: Number of MSMEs receiving USG-supported assistance to access bank loans or private equity				
Target till Dec 2009	Result till Sept 2009	Explanation on result so far	Target 2010	Target 2011
200	129	The under achievement was due largely to the difficult economic situation, which made it less attractive for the firms to obtain loans. In 2010 and 2011 PRICE will seek to work with a larger number of entrepreneurs and associations, which will allow us to achieve the higher targets we are proposing for those years. As the economic situation improves, PRICE also expects a greater number of SMEs to seek access to loans.	300	400
Common Indicator 3: Number of firms receiving USG assistance to invest in improved technologies				
Target till Dec 2009	Result till Sept 2009	Explanation on result so far	Target 2010	Target 2011
3250	6,789	PRICE provided training on new and improved production practices to a much higher number of farmers (small and micro enterprises-MSEs) than originally targeted. This occurred both in the horticulture and in the aquaculture sectors, but especially in the area of fish farming, where PRICE worked with local as well as regional associations and non government organizations to benefit a large numbers of fish and shrimp farmers. The fish and vegetable market, being mostly domestic, was not hurt by the global economic downturn that affected many export products. Moreover, it was found that average fish and shrimps pond smaller in size than what was estimated during target setting. That factor allowed PRICE funded project to assist significantly more number of farmers than targeted earlier. In 2010 and 2011 PRICE will continue assisting SMEs to improve their productivity, whether they produce for the domestic or for export markets.	4,000	3,500

Performance Measurement

The Indicators:

Two types of indicators have been used to monitor PRICE's contribution to (1) assessment of the impact of PRICE's interventions and (2) key indicators of the global U.S. Foreign Assistance Framework. The first category is called custom indicators and the second is called common indicators. *Custom* indicators include impact, outcome, and output indicators of the Project Objective, Project Intermediate Results (PIRs), and Key Results Areas (KRAs) in order to track and report on project impact. *Common* indicators are used to report on PRICE's contribution to the global results of priority program areas of the U.S. Foreign Assistance Framework.

PRICE has used five custom indicators and three common indicators. The custom indicators are:

1. Total value of sales increased.
Justification: Economic activities are largely measured by the creation of sales. It is the aggregation of the increase in total value of gross sales of assisted firms that can be attributed to PRICE activities. It is calculated in United States dollars and disaggregated by domestic and export sales.
2. Total number of full-time jobs created.
Justification: True poverty reduction means having a decent job with jobs arising from increases in sales and investment across the value chains in response to market demand.
Full-time equivalent jobs will be defined as those equal to 260 work-days per year for non-agricultural production and 150 days for agricultural production (given the seasonality associated with agriculture work). Only new jobs will count, calculated by taking the total number of work days and dividing by 260 or 150, as appropriate. A new job will be attributed to the year in which the job originated.
3. Total value of investment increased.
Justification: Economic activities are largely measured by increased investment. It is the aggregation of the increase in the total value of investment of assisted firms that can be attributed to PRICE activities. Investment will include loan and private equity. It is calculated in United States dollars and disaggregated by domestic and export sales.
4. Number of persons participating in USAID workforce development programs.
Justification & Management Utility: This indicator measures the number of individuals who enrolled in USG-funded workforce development programs. It is assumed that increased access to quality programs will result in a more skilled, adaptable workforce.
This indicator will measure the number of persons participating in USG-funded workforce development programs, including technical and vocational programs and workforce readiness programs.
5. Percentage of processing firms compliant with local labor laws.
It has been proposed to modify this indicator, as all operating plants are obliged to be compliant with local laws, including labor laws.

The common indicators are as follows:

1. Number of firms receiving USG assistance to improve management practices.
Justification & Management Utility: Firms improve their productivity, and in turn their competitiveness, by adopting improved management practices.
This indicator measures the number of firms that receive USG assistance to improve their management practices (financial management, strategic planning, marketing, etc.).
2. Number of MSMEs receiving USG-supported assistance to access bank loans or private equity.
Justification & Management Utility: Firms improve their productivity, and in turn their competitiveness, by accessing capital and increasing investment in productive assets. This indicator measures the number of micro, small or medium enterprises who are receiving assistance from USG supported sources to obtain bank loans or private equity.
3. Number of firms receiving USG assistance to invest in improved technologies.
Justification & Management Utility: Firms improve their productivity, and in turn their competitiveness, by investing in new technologies. It is the number of micro, small and medium enterprises who are receiving USG assistance to invest in improved technologies.

Data Collection & Tools:

The M&E system is designed to involve all technical team members and project counterparts in collecting data for baseline and performance. Because technical team members and counterparts have first-hand knowledge of their activities and resulting impacts, they helped to efficiently collect and verify basic M&E data in their respective technical areas. Format for data collection has been designed by the PRICE M&E unit, taking suggestions from the technical team.

Baseline periods are taken as one year right before the impacts are expected on the partners. Performance of the partners is collected quarterly after the baseline period ends.

Baseline and quarterly performance data has been collected in three ways: partner interview, sample survey and focus group discussion. The first method is suitable for the individual SMEs PRICE is working with. The approach is to proceed in a way of discussion with the partner enterprise and lead the discussion according to the need for information on performance. The partner might recall the information from memory or might check relevant business records for providing the information. Formats for recording the gathered information were designed by the M&E unit. The interviews are conducted by taking assistance from the PRICE technical team who have contact with partner enterprises and thus can easily collect data from them, ensuring its quality.

The second method for data collection, sample survey, has been used in some cases where performance data on sales, jobs and investment was not readily available from the partners. Those partners did not have any organized way of keeping records on parameters like sales, jobs or investment. Thus to collect data from those partners, such as fish farmers' associations who have large number of members (from 60 to 720), sample survey method has been used.

Statistically viable sample size has been calculated beforehand, considering the character of population to be surveyed. Two professional survey teams have worked for data collection after taking detailed briefing on the project and process of data collection from the PRICE technical and M&E teams. Formats for data collection were provided by the PRICE M&E unit. Six associations under aquaculture sector have been surveyed so far (for DMBBS: census survey, PPFPA: sample survey of 200, TFFS: census survey, TMUS: sample survey of 259, RDF: sample survey of 261, and, SSS: sample survey of 300).

The third method, focus group discussion, was conducted to have an estimated measure of performance in third quarter of 2009 only in the case of some fish associations. This was done to save time as data on performance was required just one week after the quarter ended.

Data Analysis:

The collected data has been checked by PRICE technical team and M&E unit. Then the data was processed and analyzed by the PRICE M&E. Data from sample surveys has been extrapolated to obtain the figure for the whole populations. The performance period data was compared with the baseline and the resulting change was taken as performance. All the partners' performances have been summed up for getting the aggregate performance for each sector. Then the three sectors' performance was added to obtain the project performance.