



**USAID**  
FROM THE AMERICAN PEOPLE

**PRICE**

POVERTY REDUCTION BY INCREASING  
THE COMPETITIVENESS OF ENTERPRISES



# QUARTERLY PROGRESS REPORT

**POVERTY REDUCTION BY INCREASING THE COMPETITIVENESS  
OF ENTERPRISES (PRICE)**

**APRIL 1, 2010 - JUNE 30, 2010**

**July 2010**

This document was produced for review by the United States Agency for International Development. It was prepared by Chemonics International Inc.



**USAID**  
FROM THE AMERICAN PEOPLE

**PRICE**

POVERTY REDUCTION BY INCREASING  
THE COMPETITIVENESS OF ENTERPRISES

# QUARTERLY PROGRESS REPORT

**POVERTY REDUCTION BY INCREASING THE COMPETITIVENESS  
OF ENTERPRISES (PRICE)**

**APRIL 1, 2010 - JUNE 30, 2010**

**Contract Number: 388-C-00-08-00021-00**

# CONTENTS

- Executive Summary ..... 3
- Quarterly Highlights ..... 4
- Horticulture.....6
  - A. Mango.....6
  - B. Eggplant.....8
  - C. Potato .....9
  - D. Other Interventions.....9
- Aquaculture ..... 16
  - A. Fish.....16
  - B. Shrimp .....26
- Leather Products..... 33
- Equity Integration..... 40
  - Annex 1. Performance Indicators.....41
  - Annex 2. Performance Measurement .....42
  - Annex 3. Success Stories .....46

## **ACRONYMS AND ABBREVIATIONS**

BADC	Bangladesh Agriculture Development Corporation
BARI	Bangladesh Agriculture Research Institute
BCLET	Bangladesh College of Leather and Engineering Technology
BDT	Bangladeshi taka (currency)
BFFEA	Bangladesh Frozen Food Exporter Association
BFRI	Bangladesh Fisheries Research Institute
BFVEA	Bangladesh Federation of Vegetables Exporters Association
BLSC	Bangladesh Leather Service Center
BSFB	Brinjal shoot and fruit borer
BSFF	Bangladesh Shrimp and Fish Foundation
DAE	Department of Agricultural Extension
DCA	Development Credit Authority
DOF	Department of Fisheries
EPB	Export Promotion Bureau
FIQC	Fish Inspection and Quality Control Lab (DOF)
FY	Fiscal year
GDA	Global Development Alliance
GHERS	Greater Harvest and Economic Return from Shrimp project
GOB	Government of Bangladesh
HACCP	Hazard Analysis and Critical Control Points
IPM	Integrated pest management
ITC	International Trade Center
ISO	International Organization for Standardization
LCDF	Local Currency Development Fund
LGFMEA	Leather Goods & Footwear Manufacturers & Exporters Association
LSBPC	Leather Sector Business Promotion Council
LTSE	Leather Technologist SME Entrepreneurs
M&E	Monitoring and evaluation
MOC	Ministry of Commerce
MOF	Ministry of Fisheries
MOU	Memorandum of Understanding
NGO	Non-government organization
PHH	Post-harvest handling
PL	Post-larvae (shrimp)
SME	Small and medium enterprise
STTA	Short-term technical assistance
TOT	Training of trainers
WFC	WorldFish Center

## Executive Summary

During this quarter, April through June 2010, PRICE continued and built up on its activities in all three sectors – horticulture, aquaculture, and leather products. In horticulture, PRICE remained focused on its interventions in mango, eggplant, and potato. In addition to those specific crops, PRICE worked on cross-cutting initiatives such as contract farming, marketing of safe vegetables and vegetable seeds, and promoting organic fertilizer.

In the aquaculture sector PRICE continued to focus its efforts on farmers, hatcheries, and processing plants through technical assistance, trainings, and demonstrations. With its GHERS activities, PRICE expanded its geographical coverage and consequently increased the participation of farmers. In addition to working with the new farmers, PRICE provided follow-up advice and counseling to previously trained farmers. Research on the nitrofurans metabolite source in farmed prawn was completed and a report of the findings was submitted to the Ministry of Fisheries and Livestock.

Skills development continues to be a primary focal point for PRICE in the leather products sector. To address the scarcity of workers in this sector, workforce development training has been provided for supervisors, in addition to floor workers. PRICE also continued to support market linkages to establish and strengthen strategic partnerships. PRICE helped several of its partners to increase their competitiveness through upgrading their production processes and by providing training on improved work practices to increase efficiency. PRICE assessed the impact of its 2009 flying campaign in order to determine the best way forward for the upcoming Qurbani season.

As a result of PRICE interventions this quarter, the horticulture sector partners increased their sales by approximately \$1,182,440, created 263 new jobs, and increased their investment in fixed assets by \$81,309. In addition, a total of 1,042 farmers were trained on improved technology.

Total sales generated in the aquaculture sector in this quarter were about \$8.6 million, of which \$4.1 million in fish and \$4.5 million in shrimp. Total investment in this sector was \$72 thousand in fish and \$42 in shrimp, while job creation was 604 and 29, respectively.

Leather sector partners increased their sales by \$985,507 this quarter, and 155 new jobs were created. New investment was generated at \$41,937.

In the area of gender integration, 149 jobs were created for women through PRICE's assistance. Two hundred fifty four females received assistance to improve productivity and 625 participated in workforce development programs. Twenty-one women fish farmers were linked to finance and two female entrepreneurs received assistance in improved management practices.

## QUARTERLY HIGHLIGHTS



A farmer shows his eggplant, sorted and graded; ready for the market.

- Collaborated with seven market outlets to sell chemical-free mangoes in Dhaka for the Kansat Mango Farmers Association of Chapainawabganj.
- Supported ANKUR to organize a training for 60 farmers in post-harvest handling and opened sales outlets for their mango farmers in Chudanga and Darsana,
- Continued to promote organic fertilizer with GKSSE in Bogra through training, meetings, field days, and strengthening market linkages for sustainable productivity, cost minimization, and increased income.
- Provided technical support to 500 farmers of EFADF Agro Business and 150 farmers of ORGANIX in Khulna for safe and pesticide-free vegetable production.
- Established linkages with Rural Development Academy, Bogra to leverage disease-free seed production.
- Trained 554 eggplant and other vegetable farmers to increase productivity, grow safe vegetables, and establish market linkages.
- With partners in Barguna, Patuakhali, Gazipur, and Mymensingh areas, arranged 21 training programs on improved fish farming for 1,000 new fish farmers.
- Assisted JSK and Fish Tech to conduct three trainings on group procurement of inputs and group marketing for 180 fish farmers.
- With Golden Harvest Sea Food and Fish Processing Ltd (GHSFP), arranged hands-on capacity building training for its two laboratory staff on microbiological and analytical procedures for food safety, biosecurity and quality control purposes and for workers on good manufacturing processes (GMP).
- Through JSK (Janasaba Kendra) and Khabala Mesta

**During Apr-Jun '10 the project helped generate accumulated sales of \$ 10.83 million, of which 51% was from export. 1,051 new jobs were created and investment increased by \$ 237 thousand.**

## Horticulture

In this quarter the PRICE horticulture sector continued to focus on three important high value crops: potato, mango and eggplant. It is estimated that around five million farmers and other value chain actors within Bangladesh work on these three crops. To improve the economic conditions and livelihoods of poor farmers, PRICE worked with several SMEs, associations, and companies to strengthen the value chains of these specific crops. These efforts are helping to create an enabling environment that will support the successful and productive transformation of the horticulture sector in Bangladesh.

### A. Mango

#### Improved productivity and post-harvest handling

During this quarter, PRICE worked with the farmers of Kansat Mango Farmers' Multipurpose Cooperative Society Limited (KMFMCSSL) to improve production and practice responsible post-harvest handling techniques. This was done as a continuation of trainings for 240 farmers of the same society conducted during the last quarter. KMFMCSSL's 250 plus members grow two early varieties of mango, *himsgar* and *langra*, as well as two late varieties, *fazli* and *ashwima* on approximately 283 hectares of land. PRICE organized field-based technical support for these farmers through qualified technical experts during the production season, particularly on pest management, irrigation schedules, and moisture conservation techniques during the hot-dry spell--when immature mango start dropping due to moisture stress. This training helped farmers to minimize fruit dropping, and increase the yield per hectare. PRICE also facilitated a hands-on training for the association members on simple post-harvest technologies such as sorting, grading, cleaning, washing, drying, packing and transporting mango. The impact of this training was clear as the association received prices that were 20 to 40 percent higher than previously for their produce.

With help from KMFMCSSL, association members began selling their products at two wholesale points in the nearby Kansat Mango market and to several retailers in Dhaka. By doing so, the farmers received better prices for the premium quality mangoes now produced by the society.

#### Promoting carbide free mango in Dhaka



In recent years carbide has been used to ripen mangoes faster by both wholesalers and in some cases, retailers. This ripening agent has potential carcinogenic effect on consumers and is considered a major threat to human health. Carbide is used to market premature mango, which is harvested when it is at its highest weight to generate higher revenues. PRICE, together with Kansat, is working on improved methods of mango production, safe and chemical-free ripening

techniques, and direct marketing.

In order to cater to the demand of Dhaka city dwellers for chemical free mangoes, PRICE worked with KFMFCSL on the appropriate harvesting technology of mature mangoes and responsible post-harvest handling operations such as sorting, grading, cleaning, washing and packing. This support enabled KFMFCSL to market chemical-free mangoes directly from the farm to the end consumers of Dhaka.

In conjunction with Gulshan Society, PRICE launched the first mango stand established and operated by KFMFCSL in Gulshan Society Park on May 29, 2010. The exhibition was inaugurated by the president of the Gulshan Society C.M Shafi Sami, a former foreign affairs secretary of GOB. Within the next two weeks, six more outlets were opened in Dhaka at Bonosree, Kalabagan, Uttara, Shahzadpur, Gulshan 2, and Bashundhara. The banners used in the outlets advertised a variety of chemical-free mangoes that attracted many customers. The outlets were kept open for 14 hours a day, seven days a week. PRICE helped with inventory management, demand assessment, and pricing strategies. A distribution point was established in Shahzadpur, Dhaka where the mangoes arrived directly from KFMFCSL farmers. The outlets were run by the farmers from Kansat and remained open until August.

““Many customers come here every day and buy mangoes. They tasted the mangoes at home and came back for another 10 -20 kgs. They have started relying on us as the mangoes taste different than the ones they get in the city due to its natural ripening process,” says Md. Suman Ali, one of the members of KFMFCSL.



### Supporting farmers on post-harvest handling of mangoes

Ankur is a Chaudanga-based agribusiness house that undertook a new venture in mango production, post-harvest handling, and marketing through organizing 500 mango farmers. Ankur is organizing the farmers to help them address their constraints and market their products. With PRICE's assistance, Ankur started their efforts during this quarter with two groups of farmers. From June 7-8, PRICE and Ankur organized training for 60 mango farmers focusing on post-harvest handling and marketing.



Farmers of the adjacent Memnagar and Madna villages attended the training program and were given training on the theoretical and practical aspects of harvesting and post-harvest handling processes. The end result of these trainings is for farmers to properly harvest mango at the peak of maturity and then perform proper post-harvest

handling such as sorting, grading, cleaning, and packing. By doing this, they will command higher prices for their products. The farmers have already entered into an agreement to supply their mangoes to Ankur.

In June, Ankur opened two sales centers at Jibonnagar and Chuadanga and sold mangoes directly to consumers through these centers. PRICE supported them with inventory management, transportation, and the storage of fresh mangoes. Through this process, Ankur and their staff have developed the capacity to independently manage this process in the future. Ankur was able to sell 91,585 kgs of mangoes, worth Tk. 2,500,730. Through this intervention, mango farmers received better prices for their produce and consumers were able to purchase farm fresh, juicy, and - most importantly - chemical free mangos. The sales centers have generated enthusiasm among the local residents, who appreciate the opportunity to get chemical-free mangoes locally.

### Organizing soil testing for mango farmers for sustainable production

PRICE facilitated the first of its kind soil testing for mango farmers in Bangladesh. Soil testing was performed for all 251 individual farmers of KMFMC SL through Soil Resources Development Institute (SRDI) of Rajshahi. This testing provided the nutrient status of the soil and enabled farmers to apply fertilizer based on the needs of the orchard. Under the guidance of PRICES' technical supervisor, soil samples were collected following standard procedures. Upon completion of sample testing at SRDI, each farmer received a soil report card which was used in determining the fertilizer requirement of each orchard. This initiative helped the farmers to apply the appropriate fertilizer in optimum doses, a prerequisite to conserve the soil fertility and attain sustainable production.

## **B. Eggplant**

### Assisting farmers in 11 communities to sustainably produce eggplant

PRICE has been working with Agriculture Advisory Society (AAS) to support eggplant farmers in Natore and Pabna to increase the productivity of eggplant farming by following safe and sustainable approaches. Throughout this quarter, PRICE assisted AAS in training 330 eggplant farmers on sustainable eggplant production techniques in 11 communities located in Natore and Pabna. In the daylong participatory training, farmers received information on quality seedling production, plant health management practices, year round cultivation techniques with locally adopted varieties, seed production practices, and safe pest management. After the training, farmers started preparing the seedbeds for the next eggplant crops.

Simultaneously, technical support was provided to 180 small eggplant farmers on: management of Phomosis and other diseases; control of Shoot and Fruit Borer; and improved techniques of harvesting and post-harvest handling of the eggplant. Fact sheets on major diseases and pest control measures were supplied to farmers for future use. Trained farmers using this information harvested a 10-15 percent higher crop yield than the previous year.

On May 29 a one-day training was held in Bonpara, Natore for 26 community leaders and 26 lead farmers representing all 540 farmers. This training covered techniques of organized production, use of compost for maintaining soil health, and better farming practices for horticultural crops, particularly for eggplant.

## **C. Potato**

### **Promoting disease-free potato seeds**

Rural Development Academy (RDA) Bogra has a biotechnology division and a lab to produce disease free potato seeds by using tissue culture techniques. The laboratory produces plantlets, pre-breeders, and breeder and foundation seeds. Despite conducting trainings for potato growers, their capacity is limited, constraining their efforts to reach potato seed growers in Bogra and beyond. Their production capacity is limited against the high demand of plantlets, pre-breeder, and breeder seeds. PRICE extended its support to RDA to train seed potato farmers, seed growers, seed companies, and technicians of tissue culture laboratories on different aspects of disease-free potato seed production. RDA, in turn, will support PRICE partners to produce disease-free seed potatoes. PRICE will also help RDA's laboratory to increase its capacity to produce plantlets and thus cater to the demand of the PRICE-supported Potato Seed Growers' Association. RDA will provide operational expertise to the enterprises for their tissue culture laboratories and subsequent seed production. PRICE and RDA signed an MoU with RDA, Bogra to work together in support of the potato seed industry for the ensuing season.

## **D. Other PRICE interventions in the horticulture sector**

### **Promoting contract farming of environment-friendly vegetables**

PRICE is promoting contract farming through Environment Friendly Agricultural Development Foundation Agro Business (EFADF – Agro Business) of Khulna to support



500 resource poor vegetable farmers to gain access to inputs, technology, and markets to ensure a supply of safe and pesticide-free vegetables for the consumers. As part of this effort, a three-day training on improved farming practices using environment friendly production technology and the principle of contract farming was organized in Samantasena, Lokpur, Khajadanga, Gabkhali and Telok. In total, 331 farmers, including 75 women, attended the training.

PRICE facilitated building linkages between the EFADF -Agro Business and Lalteer to supply high quality seeds directly to EFADF farmers. In this quarter, EFADF Agro - Business procured a wide range of vegetable seeds amounting to Tk.143,200 and supplied this to the farmers. The enterprise also

supplied 9.5 tons of compost fertilizer to the farmers and provided assistances in land preparation.

PRICE supported environment friendly vegetable production processes by arranging day to day field-based technical support during the production season. Farmers obtained access to and applied farming advice to obtain higher yields for their pesticide-free organic vegetables produced on the dykes.

EFADF-Agro business has established market linkages in Mongla, where the supply of vegetables is comparatively poor, resulting in farmers getting better prices for their crops. PRICE guided an enterprise to link with the Mongla wholesale market and as a result EFADF sold 71,170 kilogram of vegetables worth BDT 779,312.



### Assisting in organized production and marketing of safe vegetables

PRICE, with ORGANIX, has assisted 150 marginal farmers with the production of safe vegetables since last winter. During that time the farmers were given formal training on production and post-production technology of vegetables. Ongoing technical assistance has been provided to these farmers.



Since most farmers are dependent on organic fertilizer for vegetable production, data on soil nutrient levels is important to determine the necessary quantity of fertilizer for individual plots. In this quarter, PRICE built awareness of farmers on the importance of soil testing while collecting soil samples for testing at the nearby laboratory.



PRICE provided support to enterprises to keep an input supply register, sales and stock register, and maintaining a database of the farmers. ORGANIX supplied organic fertilizer, organic pest control devices, such as a Pheromen traps, and limited credit facilities to the farmers for the production of safe vegetables. The enterprise established market linkages with the wholesalers of Sonadanga MarketKhulna, Meena Bazar and several other city outlets. PRICE also assisted

ORGANIX to start an awareness campaign on the consumption of pesticide-free vegetables through organizing meetings and workshops. Local leaders from the environment department, civil administrations, and civil society representatives attended the workshops and supported the efforts. ORGANIX was able to market 207,750 kgs of pesticide-free vegetables from its farmers, worth Tk 2,808,900.

### Supporting farmers associations in increasing productivity and market linkages

Low productivity and poor market linkages are two important areas where PRICE is providing significant assistance. PRICE reaches thousands of small farmers by supporting several farmers' associations in the vegetable production belts of Bangladesh. Bhatar Char Krishok Unnoyan Bohumukhi Samobay Samiti (BHAKUBS) is one such association, formed with the active support from PRICE. Located in the Vaterchar Village of Narshingdi, BHAKUBS is comprised of 224 vegetable farmers cultivating 67 acres of high flood-free land.

Although the farmers live in close proximity to a highway, there is a lack of scientific vegetable production methods, especially in pest management and post-harvest handling. They also suffer from inadequate access to inputs, especially quality seeds and market information. Due to these constraints, farmers were not able to generate strong levels of income from vegetable farming. PRICE supported BHAKUBS in establishing linkages of its farmers to quality input sources, and organizing training and field-based technical assistance in production, post-harvest handling, and marketing of their produce. PRICE also provided organizational development support to BHAKUBS.

In May, seven trainings on 'Environment-Friendly Vegetable Production & Post-Harvest Management' were facilitated by PRICE, reaching 175 (including 5 female) vegetable farmers. All farmers went through a comprehensive three-day training that focused on practical, hands-on lessons covering productivity, use of organic fertilizer, Integrated Pest Management (IPM) and post-harvest handling.



As a result of this training, participant farmers learned modern and sustainable ways of vegetable farming, and pest control management. About 25 percent of the farmers immediately adopted what they learned and benefitted from it, minimizing fertilizer and pesticide use to achieve a 10 percent higher yield.

During the summer harvest period of this quarter, April-May, 40 farmers who received training and adopted IPM practices, produced safe vegetables and doubled their income by selling 16,000 kg of eggplant, cucumber and teasel gourd directly to two retail outlets, Agora and Nandan Super Shops located in Dhaka. PRICE also established linkages between VAKUBS and the Golden Harvest Agro Industries Ltd.

### *Supporting production, promotion, and marketing of good quality vegetable seeds*

PRICE is currently supporting production and promotion of vegetable seeds through its partner enterprises- Padma Seeds, Lalteer, and Konica Seed Company.

PRICE supported Messer's Padma Seeds to improve its documentation and inventory management. PRICE recommended the company purchase a computer so they could have access to the internet, which not only helped them improve their efficiency, but also helped them build their linkage with Indian Seed enterprises. Padma Seeds procured red amaranthus, spinach, and various gourd seeds from its contract farmers and sold 65,500 kgs of vegetable seeds worth over 13 million taka. PRICE provided technical support for seed production and post-harvest handling.

In conjunction with Lalteer, PRICE promoted the use of high quality seeds by supporting 64 farmer's field day programs held in various parts of the country. Participating farmers received information regarding new varieties of seeds, cultivation techniques, pests, disease, and cost-benefit analysis. The field days strengthened farmers' access to good quality seeds through creation of linkages with the seed retailers. On average, 250 farmers attended each field day.

PRICE supported a number of community meetings organized in Bhola, Barisal, Chittagong, Feni, and Comilla by the retailers of Lalteer. In the meetings, 40-50 participants were given information regarding important traits of good quality seeds, preparing soil, seeds, seedlings, time and techniques of sowing, use of fertilizer and irrigation, weeding, control of pest and diseases, and the collection and storage of vegetables. At the end of the discussions, free vegetable seeds were given to interested farmers as an incentive for vegetable cultivation in homestead land.

### *Promoting organic fertilizer for sustainable production of vegetables and fruits*

PRICE has been supporting Grameen Krishok Unyon Sangstha Enterprise (GKSSE) of Bogra to promote organic fertilizer through trainings, meetings, field days, and strengthening market linkages. Although compost is not new to the farmers and extension agents, the commercial production of organic fertilizers that follow a natural biological process is a comparatively new phenomenon. This is due to the current scarcity of cattle and other biomass like water hyacinth and green manure. Recently farmers have been completely dependent on chemical fertilizers, causing a rapid depletion of micronutrients in the soil, adversely affecting the soil structure, and negatively impacting the moisture retention capacity, which results in poor yields and high costs. PRICE has been actively promoting organic fertilizer for sustainable productivity, higher quality crop, and cost minimization which can lead to 20-30 percent higher incomes.

To inform farmers and extension agents about the benefits of using organic fertilizers, technical orientation courses, yard meetings, and trainings were organized throughout this quarter.

A one-day technical orientation course was held in both Sherpur and Shahjahanpur Upazilla, where 50 SAAO participated to receive technical information on the use and benefit of organic fertilizer. Five farmer training courses on use and application of organic fertilizer were held in Kalitala, Shibgang, Satgari, Ranirhat, Shajahanpur, and Sabgram, Rajapur Union. These were attended by 200 farmers in five batches. Twelve yard meetings, attended by 480 farmers, were held in Shujabad Poshim Prara, Parir Hat Maishaban, Shelihara Gokul, Bograsadar, Shatgram, Atbaria, Tatugashi, Pirpara, Arial Bazar, Majhira, Kamarkandi, Megha, Sapgram, Shansardighi, hakhola, and Kamarpara of Bogra.

Forty demonstration plots were organized in six Upzalas of Bogra in small plots ranging from 5-10 decimal land area. These plots show the effects of using the correct quantity of organic fertilizer against the control plot in 10 different summer vegetables including eggplant, gourds, and chilies.

The demonstrations were followed by two field days organized at Shibganj and Shariakandi in June. In total, 80 neighborhood farmers, local leaders, extension agents, technical experts, and GKSSE representatives participated and saw the effects of organic fertilizer on crop production. Discussions were held about the benefits of using organic fertilizer including cost reduction due to decreased chemical fertilizer and less frequent irrigation. Demonstration farmers reported that the use of organic fertilizers has increased their crop yield by 20-30 percent, that their crops look better, pest infestation is lower, and their cost has been reduced by approximately 20 percent.

Through PRICE, GKSSE extended its marketing network to six Upazilas of Bogra by establishing a network of 170 retailers. These retailers have contributed to increased sales of the company, investments, and new jobs. Compared to the same period of the previous year, GKSSE increased their sales of organic fertilizer from 31,550 kilograms to 135,375 kilograms.

### *Supporting enterprise for export*

During this quarter PRICE provided Golden Harvest Agro Industries Ltd. with technical advice and linkages to farmers to support their export negotiations with Tesco, particularly of potato to regional markets in South East Asian countries such as Malaysia, Singapore, and beyond. PRICE is providing technical guidance on product quality, establishing backward linkage with GUKED for sourcing high quality potatoes, and participating in meetings with Tesco representatives to explain production systems and other technical issues related with export requirements.

### **Quantitative Results**

Horticulture sector partners have increased their sales by around USD \$1.18 million during this quarter. In the northern region, GUKED, GKSSE, and Murail Rural Association together have achieved increased sales of around USD \$440,000. In the south-western region, Padma Seeds, Organix, and EFADF have contributed about USD

\$240,000 to the total increase in sales. Lal Teer Seeds has achieved USD \$167,000 of increased sales across the country. Two mango farmers' associations (Kansat Mango Farmers' Association and Ankur Mango Farmers' Association) have achieved an increase of around USD \$336,000 in sales.

Two hundred sixty three new jobs have been created by the partners in this quarter. Partners have increased their investment in fixed assets by USD \$81,000. GKSSE alone has invested around USD \$67,000 to expand its capacity. EFADF Agro Business and Kansat Mango Farmers' Association have also invested in fixed assets.

In this period, 1,042 MSMEs (81 women-led) have received assisted to invest in improved technology. Fifty MSMEs have received assistance to improve their management skills.

The following tables shows major accomplishments of the sector in the quarter:

Performance of Horticulture Sector (April-Jun 2010)							
Partners	Sales (USD)			Jobs			Investment (USD)
	Export	Domestic	Total	Women	Men	Total	
<b>GUKED</b>	0	388,696	<b>388,696</b>	0	41	<b>41</b>	-
<b>Murail Rural Society</b>	0	28,943	<b>28,943</b>	0	0	<b>0</b>	-
<b>GKSSE</b>	0	22,704	<b>22,704</b>	0	-3	<b>-3</b>	<b>66,899</b>
<b>Konika Seeds</b>	0	-	-	0	1	<b>1</b>	-
<b>Padma Seeds</b>	0	187,659	<b>187,659</b>	2.5	2.5	<b>5</b>	-
<b>Ankur Mango</b>	0	36,242	<b>36,242</b>	0	8	<b>8</b>	<b>232</b>
<b>EFADF Agro Business</b>	0	11,294	<b>11,294</b>	<b>0.14</b>	<b>0.2</b>	<b>0.34</b>	<b>6,458</b>
<b>Organix</b>	0	40,709	<b>40,709</b>	0	0	<b>0</b>	-
<b>Lal Teer Seeds</b>	0	166,667	<b>166,667</b>	0	0	<b>0</b>	-
<b>Kansat Mango Farmers' Association</b>	0	299,527	<b>299,527</b>	-	212	<b>212</b>	<b>7,721</b>
<b>Total</b>	<b>0</b>	<b>1,182,440</b>	<b>1,182,440</b>	<b>3</b>	<b>260</b>	<b>263</b>	<b>81,309</b>

### Trainings in the horticulture sector April- June 2010

Partners	Productivity				Management			
	Training	Male	Female	Total	Training	Male	Female	Total
Grameen Krishok Sohayak Sangstha Enterprise (GKSSE)	17	680	0	680	02	50	0	50
ANKUR, Darshana, Chuadanga	2	60	0	60				
Vhaterchar Krishak Unnayan Bahumukhi Samabai Samity (VHAKUBS)	7	170	05	175				
EFADF Agro- business	11	256	75	331				
Agriculture Advisory Society (AAS)	12	355	01	356				
<b>Total Horticulture</b>	<b>49</b>	<b>1521</b>	<b>81</b>	<b>1602</b>	<b>2</b>	<b>50</b>	<b>0</b>	<b>50</b>

# Aquaculture

## A. Fish

During this quarter, PRICE worked with its clients to increase fish production and market linkages by developing skills in best farming practices, farm management, and group procurement of inputs. To accomplish this, PRICE signed 29 MOUs to provide its partners with technical assistance on improved farming, manufacturing, and marketing of dry fish and non-traditional fish products. PRICE will collaborate with these organizations to produce hygienic dry fish, improve packaging and marketing, and provide technical assistance on bio-security and related matters.

PRICE and its partners in the fish sector arranged training programs on improved farming for new farmer-members and held result demonstrations for non-member farmers. Non-member farmers were encouraged to utilize improved farming practices in the future through listening and learning about the successes of the partner-members. PRICE assisted its partners with trainings on group procurement of inputs and group marketing for small farmers in clusters.

To further PRICE's work in market linkages, an expatriate value chain consultant visited most of the fish partners in Mymensingh, Bogra and Jessore to explore the domestic and export market prospects for their fish.

### *Training on improved fish farming systems and management*

In partnership with four of its organized farming groups – RDF, JSK, TFFS and MFBA - PRICE facilitated a total of 24 training programs on improved farming for better and sustainable biomass production during this quarter. The farming and farming management related trainings for each group focused on the following:

- site selection for pond construction based on soil quality and source of water
- pond preparation prior to stocking
- removing aquatic vegetation
- ensuring prolonged sunshine on surface of water by trimming branches of trees on embankments
- liming
- fertilization
- species selection
- species combinations
- mono, mixed, poly or integrated culture
- stocking
- feeding
- sampling
- feed
- water and health management

In addition to farming and farming management trainings, all training participants were introduced to good aquaculture practices (GAP), eco-friendly and symbiotic aquaculture, integrated farming for household nutrition, food security and family income, responsible farming to avoid water and soil pollution, maintenance of soil and water health for successive good crops, and importance of activating plankton-based natural food cycles in farming water to enhance natural supply of dissolved oxygen to fish farms.



Farmers acclimatization of improved fish farming system

PRICE developed diverse manuals designated for different types of fish aquaculture. Depending on needs, the relevant manuals were provided to trainees commensurate to the topics discussed during a particular training program. All training programs during this quarter took place between April 10 and June 30 in Barguna, Patuakhali, Gazipur and Mymensingh areas.

During this quarter RDF and PRICE jointly organized 11 training programs for 550 farmers at Patuakhali, Barguna and Gazipur areas. All training programs were attended by the ethnic minority and resource-poor farmers of the area, with significant numbers of women. Most of RDF's beneficiaries own closed-water body suitable for fish farming and a few groups lease water bodies for community-based farming. RDF beneficiaries are relative newcomers in aquaculture and generally practice traditional farming. PRICE is assisting in transforming their farming practices from traditional to improved traditional farming. The farmers utilize an integrated farming system that focuses on family nutrition, food security, and family income to farm mostly carp species of indigenous and exotic fish. They consume part of what they produce at the family level and sell the rest.



In 2008 PRICE established partnership with TFFS and since then the group has generated huge sales revenue and increased productivity by 25 percent, incorporating pangus and carp as mixed culture. Given the early successes, PRICE and TFFS have taken initiative to extend the partnership until the end of 2011. The goal is to train an additional 200 medium and large farmers and increase yield to more than 60 ton/ha

against the current national average of 3.5 tons and the TFFS average of 40-50 ton/ha. Carp were initially employed as sweeper fish, used to clean excessive plankton growth in pangus farming. However, with supplemental feed they are able to create symbiotic farming where pangus farming produces huge quantities of plankton which are strained by carp as live food and thus clean water for better pangus growth, benefitting both.

JSK, in partnership with PRICE, organized farming trainings for 1000 farmers in Feni, Rajbari and Madaripur districts. Most of JSK's beneficiaries are micro and small farmers with gender parity between males and females among the trainees. JSK beneficiaries practice fish farming for both family consumption and sale in household ponds. Family owned household pond-based farming plays an important role in food security and is environmentally friendly, as embankments of cultured ponds are used for vegetables and fruit raising.



Muktagacha Fish-farmers and Business Association (MFBA) signed a partnership agreement with PRICE to train 300 of their members in 2010 and an additional 200 in 2011. The first batch of training with 50 participants was held during the last week of June. MFBA members farm mostly air-breathing species like climbing perch, stinging catfish, and mono-sex tilapia together with carp and pangus. Most of the species fetch high market prices in domestic markets and have demand for export. PRICE is assisting the MFBA with responsible farming of diverse species under high density conditions, together with general farming management and improved farming.

### Training on group procurement and marketing

JSK, with facilitation from PRICE, arranged three training programs for 180 farmers on group procurement of inputs and group marketing for their beneficiary members. The training built awareness in farmers of the benefits of collective procurement of inputs such as feed, seed, and fertilizers. The quality and prices of these commercial items can vary a lot and are often untraceable. Collective procurement of inputs in bulk is cost-effective, reduces the transportation cost, and may ensure quality and traceability. Group marketing by members of an association, especially those who do not produce a large amount or are able to harvest whole crops at a time, can benefit them through collective partial harvest, post-harvest handling, chilling, storage, transportation, and marketing.

Fish Tech, BD Ltd., an input seller company, completed improved farming training to its marketing staffs in conjunction with PRICE. This training demonstrated their products and services and showcased what they could offer to the farmers. During April and May

of this quarter they arranged five group procurements and conducted marketing trainings for 200 associated lead farmers to enhance sustainability of business and to establish and maintain relationships between the groups.

### Result demonstration to increase outreach

During April-June of this year PRICE assisted two of its partners JSK (Jenoseba Kendra) and Kahaloo Motsa Chashi Somiti (KMCS) to arrange six result demonstration/field days based on the success of demonstration farms, one with the KMCS and five with JSK. A total of 600 prospective farmers adjacent to the respective demonstration farms attended the events. This joint effort by KMCS and JSK in partnership with PRICE increased their respective outreach and attracted new members to their association's groupings.



Farmers of KMCS gathered in a training session. KMCS arranged result and method demonstrations to encourage other isolated farmers to join their groups to continue the effective partnerships with PRICE.

KMCS, an association of medium and large farmers in the Bogra region attained farming excellence by producing 30-40 tons of fish/ha in recent years. They used to farm mainly indigenous and exotic carp, however during last few years KMCS members are practicing mixed culture carps and Thai catfish pangus. Mixed farming of catfish and carps with cost-effective supplemental feeding led to their success of high yield. To promote increased organizational capacity,

### Promoting market linkages

PRICE organized trips to Mymensingh, Bogra, Khulna, and Cox's Bazar to promote market linkages among value chain members and enterprises to suppliers and exporters. While discussing exporting farm fresh water fish with MFBA, PFPFA, Nokla Matshyajibi Samity (NMS) and TSMS, all association members showed interest in linking to processing plants. PRICE's staff shared that most processing plants in the country do not purchase directly from farmers, but rather prefer to buy through suppliers.



PRICE collected a list of fish suppliers from fish processing plants in Chittagong and Khulna and linked those to specific farmers who farm climbing perch and stinging catfish.

PRICE staff and expatriate consultant Gordon Studebaker met with a few feed manufacturing companies, which are partners of PRICE and are under negotiation to create partnerships on sources of imported feed ingredients and import prices. They also met with officials from a feed miller's association and it was learned that one of most important feed ingredients, soy cake, is imported from neighboring India and China. While validating the import prices for soy cake, Gordon Studebaker discovered that the prices for soy cake imported from Indian or Chinese items have a higher price than what could be imported from Brazil – including the cost of freight. The information was communicated to the feed miller's association, together with contacts in Brazil.

### *Training for capacity build-up of lab technicians*

PRICE is assisting Golden Harvest Seafood and Fish Processing Ltd, to build the capacity of their laboratory staff, including two recently recruited female staff, on chemical, biological and organoleptic testing (a mandatory procedure for maintenance of laboratory profiles by export oriented fish and shrimp processing plants). The trainings, continued from last quarter, include analytical and culture procedures through hands-on practices. It is expected that these trainings will continue into the next quarter as well.

### *Introduction of new species*

Three PRICE partners introduced new fish species among their farming stocks to provide more revenue earnings. Some farmers in PFPFA in Phulpur, Mymensingh introduced stinging catfish and mono-sex tilapia as new species among their members to farm. PRICE in-house staff provided manuals on farming those species. DMBBS, a seed traders association with nursing facilities, introduced



high-priced glass fish popularly known as Pabda (Fig LHS) and considered as delicacy. TSMS, a newly signed partner in Mymensingh, and its members were farming Thai catfish pangus, indigenous carps and exotic carp species. However, some members of the association introduced stinging catfish, mono-sex tilapia, and climbing perch among the commercial farming species with an anticipation of high market prices.

### Promotion of over-wintered fingerlings

PRICE partner DMBBS is trying to transform their mainly seasonal business of fish seed trade into a perennial business with different types of aged fish seeds. They initiated mass scale production and contract growing of over-wintered fish seeds -- mainly carp, local catfish, and Thai Catfish (pangus). PRICE supported DMBBS' promotion of the over-wintered fingerlings to farmers throughout Bangladesh by training their farmers on over wintering. Traditionally fish seed trade peaks during the May-July period based on monsoon, however DMBBS is promoting over-wintered fingerlings starting from February to May, which will effectively enlarge the grow-out period and will facilitate two cropping patterns using relatively larger fingerlings.



### Study to identify hatcheries capable of producing inbreed-free fish seeds

PRICE initiated a study to explore the sources of quality grade fish seeds commercially produced in the country. Hatcheries produce fish seeds commercially and it is believed that malpractices in hatcheries due to deliberate intent or ignorance seriously corrupt the seeds in successive generations through cross-breeding within the same or similar genetic line, causing inbreeding problems. Farmed fish is now fraught with danger of stagnant or slow growth rates causing wastage of time and resources, especially with those fish raised with hatchery produced seeds. And unfortunately, 99% of farmed fish are raised using hatchery seeds in the country.



PRICE hired a short-term consultant who is working in areas where most of the fish seed are produced and has found some hatcheries that are taking initiatives to raise the quality of their brood. PRICE has taken the initiative to link organized farming groups to better seed sources as well as linking partner hatcheries to inbreed-free brood sources for indigenous and exotic species commercially farmed in the country.

### *Follow-up activities from the Thailand study tour*

In December 2009 PRICE organized a study tour to Thailand to link value-chain partner representatives with highly efficient fish and shrimp value-chain actors from seed production to processing. The study tour included hands-on activities for the participants. Most of the participants considered the study tour worthwhile and useful to learn about expansion, renovation, and remodeling of their business or organization to improve efficiency. Seeing the success of Thai counterparts led two participants, one processor and one association organizer cum lead farmer, to take the initiative to upgrade their operations. MFPL, a fish processing plant in Jessore, partnered with PRICE for assistance in capacity building on biosecurity measures, Hazard Analysis Control Critical Point (HACCP), Standardized Operating Procedures (SOP), Sanitary Standardized Operating Procedures (SSOP), and code of conduct (COC).

Voirab Fish Agency (VAP), an out-grower of fish and shrimp in Bagerhat areas, used observations from Thailand to reorganize the association to provide more member services, increase membership contributions, and encourage active participation of the members during decision-making processes. Since the reorganization the membership of the association has increased from 1,000 to 2,500 and has a well furnished association office, paid staff, and clear documentation and membership identification.

### *Access to finance*

Most of PRICE's partners in the fish sector are micro and small farmers, often lacking operating and investment capital for improved farming. Many of these farmers are linked with other small scale economic activities in rural areas and often take loans from micro-credit sources. During this quarter PRICE helped 21 women farmers receive micro-credit from a local NGO (TMUS), reaching a cumulative total of 1,259.

### *New MoU signed between PRICE and diverse fish partners for production efficiency and quality improvement*

During this quarter three MoUs were signed between mono-sex tilapia hatcheries and PRICE, in Cox's Bazar, Pabna and Natore districts. PRICE will assist these hatcheries (AHFC, CAPL and NBTH) in enhancing their production efficiencies and quality improvement. This will be done through judicious use of hormones to convert all tiny tots to male individuals. All three hatcheries will work with the neighboring 850 farmers to increase their farming capacity and improve their farming of mono-sex tilapia.

Six carp hatcheries also signed MoUs with PRICE during this quarter; five of which are located in Jessore (MFFH, SMH, RFH, PMH and NFC) and one in Khulna district (SBPL). These hatcheries will receive technical assistance to produce inbreed-free seeds, increase bio-security measures in hatcheries, and will work to provided improved farming training for the 1,650 farmers associated with them.

Twelve associations/cooperatives signed MoUs with PRICE for group based farming during this quarter. They are geographically distributed in Bogra (KMPUSS, TMCS, SMCS and AMBS), Mymensingh (MFBA, TSMS and BMCS), Khulna (GMSS), Narial (MMS), Cox's Bazar (SBMK), and Barisal (BADS) districts. Combined, these 11 associations/cooperatives will train over 3000 fish farmers in 2010 and additional similar numbers in 2011. Given the previous success with one association in Mymensingh, partnership with TFFS has been extended until the end of 2011 with the expanded goal of incorporating additional 100 medium to large farmers with the previous group of 60.

Six NGOs (SSS, TMUS, RDF, US, AAS, and SSURD) teamed with PRICE separately to sign partnership agreements until 2011 to train about 11,000 small and medium farmers, with emphasis on women and young adults, on improved farming, farming management, group procurement of inputs, and group marketing. Among the six, three NGOs (SSS, TMUS, and RDF) worked with PRICE during 2009 and trained 2,800 farmers. The NGO beneficiaries will cover more than 15 districts in Bangladesh.

Agriculture Advisory Society (AAS) will provide trainings to 1,000 medium farmers in Natore until 2011. The farmers of AAS are specialized in producing high priced, larger sized indigenous carp for domestic markets. The improved farming training will include enhancement of natural food to provide natural flavor in farmed fish. The aquaculture unit of PRICE believes that farmers affiliated with AAS have high potential to produce fish which could be exported abroad to ethnic markets. This is based on the current situation where the larger indigenous fish have high demand among Bengalis both from Bangladesh and India living abroad. PRICE will assist creating linkages between the responsible producers of AAS with the fish processors.

SSS, in partnership with PRICE, organized all-women groups of household fish farmers in six districts, Lakshmipur, Comilla, Chandpur, Tangail, Natore, and Rajshahi, and trained a total of 1440 women fish farmers during 2009. Given their success in organizing rural women and encouraging them to engage in household pond-based fish farming and in increasing women's participation in integrated aquaculture for food security, family nutrition, and income, the partnership between PRICE and SSS has been extended until the end of 2011. The goal is now to reach an additional 2000 women/household farmers and increase the yield of fish in ponds and other crops on the embankment significantly from the current levels of production for family based consumption and sale.

In the fish sector, two other new partners who manufacture dry fish (NFMC) and processed fish (MFPL) signed MoUs. These partners, in collaboration with PRICE, will provide training to enhance the capacity of roughly 2,650 workforce members and 500 fish dryers cum traders. MFPL produces items for export purposes and NFMC processes items mainly for local consumption and a small amount for export.

## **Quantitative Results**

Fish sector partners have increased their sales by approximately USD \$4.2 million this quarter. In the Mymensingh-Jamalpur area, four fish farmers' associations and one fish seed traders' association have achieved increased sales of approximately USD \$3.4 million. In Bogra, three fish farmers' associations have contributed approximately USD \$120,000 of the total increase in sales. Two fish farmers' association/cooperatives in Comilla-Noakhali-Rajbari area have achieved increased sales of USD \$57,000. The ethnic Bengali group of fish farmers, RDF in Barguna, has achieved increased sales of USD \$49,510. Fish Tech Ltd., an input seller company, has increased sales by USD \$84,000. All sales are domestic sales. On the export side, only Golden Harvest Seafood and Fish Processing Ltd. has increased their sales by USD \$393,800.

Together, all partners have created 604 full-time equivalent jobs this quarter. Investment has increased by approximately USD \$72,000 from the partners. A large part of this investment came from Kahaloo Fish Farmers' Association (USD \$24,399) and Fish Tech Ltd., an input seller company (USD \$14,493).

In this period, 920 farmers, 172 of them women, received assistance to invest in improved technology. Twenty-one female farmers were helped to get access to loans.

The following table shows major accomplishments of the sector in the quarter:

<b>Performance of Fish Sub-sector (April-Jun 2010)</b>							
<b>Partners</b>	<b>Sales (USD)</b>			<b>Jobs</b>			<b>Investment (USD)</b>
	Domestic	Export	Total	Women	Men	Total	
<b>DMBBS</b>	563,673		<b>563,673</b>	-	100	<b>100</b>	<b>2,743</b>
<b>PPFPA</b>	232,848		<b>232,848</b>	-	158	<b>158</b>	<b>254</b>
<b>TFFS</b>	2,513,942		<b>2,513,942</b>	-	115	<b>115</b>	<b>7,613</b>
<b>Nokla Motsojibi Somity</b>	33,522		<b>33,522</b>	-	-	-	-
<b>Bamunji Beel Motsojibi Somity</b>	19,043		<b>19,043</b>	-	-	-	-
<b>TMUS</b>	89,253		<b>89,253</b>	-	32	<b>32</b>	<b>87</b>
<b>Kahaloo Fish Farmers' Association</b>	6,144		<b>6,144</b>		17	<b>17</b>	<b>24,399</b>
<b>Mourail Fish Farmers' Association</b>	87,102		<b>87,102</b>	-	8	<b>8</b>	<b>2,664</b>
<b>Pachpir Bazar Fish Farmers' Association</b>	27,224		<b>27,224</b>	-	50	<b>50</b>	<b>5,258</b>
<b>SSS</b>	4,019		<b>4,019</b>	0.2	2	<b>2</b>	<b>5,218</b>
<b>Jana Seba Kendra</b>	53,068		<b>53,068</b>	0	10	<b>10</b>	<b>4,596</b>
<b>RDF</b>	49,510		<b>49,510</b>	0.16	84	<b>85</b>	<b>4,667</b>
<b>Fish Tech Ltd.</b>	84,203		<b>84,203</b>	2	18	<b>20</b>	<b>14,493</b>
<b>Golden Harvest Seafood and Fish processing</b>	-	393,800	<b>393,800</b>	2	4	<b>6</b>	-
<b>Total</b>	<b>3,763,552</b>	<b>393,800</b>	<b>4,157,352</b>	<b>5</b>	<b>599</b>	<b>604</b>	<b>71,992</b>

### Trainings in the fish sector April - June 2010

<b>SL</b>	<b>Partners</b>	<b>Productivity</b>			
		<b>Training</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
01.	Rakhaing Development Foundation (RDF)	11	448	102	550
02.	Trisal Fish Farmer-Business Somity (TFFS)	4	200	0	200
03.	Jano Seba Kendra (JSK)	3	81	99	180
04.	MFBA (Muktagacha Fish-Farmers & Business Association) Association)	1	50	0	50
05.	Fishtech (BD) Limited	5	200	0	200
<b>Fish Total =</b>		<b>24</b>	<b>979</b>	<b>201</b>	<b>1180</b>

## **B. Shrimp**

In the shrimp sector, PRICE continued its work with World Fish Centre (WFC) to implement GHERS, focusing on improved and disease-free farming. At the same time, PRICE worked with processing plants to implement bio-security and improve compliance with international standards.

PRICE provided follow-up counseling to sales agents, dealers, and lead farmers to increase their capacity in shrimp and fish farming and farming management. Improvements were made through use of commercial pellet supplemental feeds, micro-inputs like mineral, vitamins, non-banned antibiotics, and purified water for disease free, high density and high yielding farming.

In a joint effort with BFRI and DoF under National Action Plan (NAP) of GoB to combat the presence of nitrofurans metabolites in farmed fresh water prawn (golda), PRICE concluded two phases of experiments, the results of which have been provided to the Ministry of Fisheries and Livestock in a report. The last phase of the experiment at BFRI, Cox's Bazar, is on-going and expected to be concluded by the end of July, 2010.

### **Mobilization of farmers in GHERS initiative**

The WFC mobilized roughly 4,000 black tiger shrimp farmers in Khulna, Bagerhat, and Satkhira districts under the GHERS initiatives. The cumulative number of farmers mobilized this year reached over 8,400, slightly exceeding 2010 targets. PRICE-WFC assisted 11 new depots and, through the service of 34 extension facilitators, aided by three extension specialists and other GHERS staff, mobilized the farming groups. The groups mobilized are stretched over 10 upazilas in three districts in greater Khulna.

### **Trainer's training to develop skilled workforce in GHERS**

PRICE, in collaboration with WFC, arranged two training programs for 40 extension facilitators, one of them female. The intensive, five-day training programs, completed during the second and the third weeks of April 2010, were conducted by GHERS extension specialists and hired short-term consultants in Khulna. Among the 40 extension facilitators, 34 were new recruits in 2010. The EFs received training on improved farming methodologies of the Closed-System Pond Technology (CST), Modified Traditional Technology (MTT), and Traditional Best Management Practices (TBMP). Additionally, improved farming and good aquaculture practices (GAP) were incorporated into the training programs. To promote outgrowing/contract farming schemes under GHERS, the trainers received outlines on the contract farming system. A joint team of USAID and PRICE visited different GHERS activities. In addition to the EFs, 17 depot owners and/or their representatives received similar trainings for five days in Khulna to ensure sustainability as it is expected that the EFs working for GHERS will continue to work for the respective depots after 2013.

### Training of farming groups in GHERS to increase productivity

During this quarter PRICE-WFC worked with the 34 newly recruited trainers to conduct a total of 886 field level hands-on trainings in 10 upazilas of Khulna, Bagerhat, and Satkhira districts. Each meeting was attended by approximately 20-30 farmers from a cluster. The meetings highlighted the three types of farming technologies CST, MTT and/or TBMP. In total 7,054 farmers were trained, and some groups received multiple training programs during the April-June period. Out of the 7,054 farmers who received training, 320 (4%) were female and 6,734 were males (96%). Since most of the shrimp farming in Bangladesh is practiced mainly in remote areas outside of the family dwelling female participation in traditional and improved traditional shrimp farming is inhibited. This leads to fewer women participating in GHERS activities as compared to fish farming where women participate in fish culture in ponds adjacent to their homes.

### Follow-up activities of previously trained farmers group through counseling

Six extension facilitators who received follow-up trainings in 2010 provided services to 2,772 previously trained farmers who have been associated with GHERS since 2008. Follow-up trainings and counseling for these farmers is an easy way to transmit new developments in shrimp farming and farming management to them and are important for performance evaluation and data collection as PRICE collects information on the status and condition of all GHERS farmers, farming activities, and performance on yield, sales, and investment and will do so until 2013.

### Shrimp PL screening for virus at laboratory in Cox's Bazar

PRICE-WFC worked with a privately owned testing laboratory (PRANTI) in Cox's Bazar to conduct testing on shrimp seed production cycles so that virus negative strains could be identified with traceability. The three stage testing is done with PCR (polymer chain- reaction) and is required for broods, newly hatched larvae (nauplii), and post larvae (PL) to confirm a lot for certification as screened and virus negative. As a result, tests are needed on mother shrimp, nauplii, and post larvae in the hatchery to certify whether or not the screened PLs are virus negative.



The PCR testing lab, Pranti, in partnership with six hatcheries in Cox's Bazar and one hatchery in Khulna, conducted the required tests. Though Gazi is located in Khulna, they use a part of Satkhira hatchery to produce nauplii in Cox's Bazar and airlift nauplii to Khulna via Jessore. Brood and nauplii for Gazi are tested while they are in Cox's Bazar



and the transported nauplii are reared in the Gazi hatchery in Khulna. Once the nauplii metamorphose to PL stage, Gazi sends a sample to Pranti to test PL prior to use in farming.

During this quarter Pranti tested and certified a total of 31.49 million PLs for seven hatcheries, as shown in the Table below:

**Table: Hatchery-wise tested and certified PL**

<b>Name of Hatchery</b>	<b>Frequency of Test</b>	<b>Total Tested PL</b>
Zam-Zam	4	3,763,700
Gazi	5	5,544,000
Satkhira	1	650,000
Niribili	7	10,785,450
Radiant	11	6,682,810
Borak	1	1,798,720
Quality	1	1,947,000
<b>Total</b>		<b>31,491,270</b>

*Popularization of screened PLs*

PRICE, through WFC, is popularizing the usage of screened PLs among the GHERS farmers. During this quarter, GHERS farmers were the main customers of screened PLs that were tested and certified by PRANTI lab. Through their depots, GHERS farmers procured roughly 26.4 million screened PLs as reported by Pranti and confirmed by GHERS officials. Gazi Fish Farming Limited, a partner enterprise of PRICE, bought screened nauplii from PRANTI and airlifted these to their hatchery located in Khulna and reared those to PL stages. The PL samples were then sent to PRANTI lab in Cox’s Bazar for re-testing and after confirmation of being virus negative, they used the certified PLs for their own use in their



semi-intensive farms (2.5 million) and sold some to beneficiary farmers (roughly 3 million). Besides Gazi, Satata fish farming in Khulna also took more than 2.6 million screened PL to use in their farms.

### *Semi-intensive shrimp farming by Gazi fish farm*



Paddle wheel operation for high density farming pattern/year that uses all traceable inputs. PRICE is promoting Gazi as the model for the production of increased biomass with traceability under high density farming.

PRICE in collaboration with WFC, worked with its enterprise partner Gazi Fish Farms Ltd, Khulna to stock 81 semi-intensive shrimp ponds with screened PL certified by PRANTI. They also reared the in-house hatchery of Gazi in their farming complex. Gazi stocked the ponds with tested virus negative PL at a rate of 7-12 PL/m<sup>2</sup>. Gazi is the only shrimp farm in Bangladesh with a significant amount of shrimp production in a two crop-

### *Training for capacity build-up of feed mill workers*

As part of capacity building of feed technicians and workers at Satkhira Feed Industries Ltd (SFIL), PRICE provided assistance on biosecurity measuring and storage while handling the ingredients, proper mixing, homogenization of different components, pelleting, packaging and storage to prevent contaminations, spoilage, and loss. The importance of separately manufacturing different types of aquaculture feeds such as prawn, shrimp, carp, tilapia and pangus feeds was discussed with the feed technicians and workers. Since the SFIL manufacture both aquaculture and poultry feed under the same sheds, it was advised to strictly separate the production line of both products to avoid mixing of two items.

### *Experiment to find the source of nitrofurans contamination and its removal*

Under the National Action Plan of GoB to combat the presence of nitrofurans metabolites in farmed fresh water prawn (golda), PRICE, in collaboration with BFRI and DoF, concluded an experiment which showed that the probable source of nitrofurans metabolites in farmed prawns



originates in certain shrimp/prawn, poultry, and fish feeds.

The second phase of the experiment attempted to clarify whether nitrofurans metabolites accumulated in farmed prawn after ingesting contaminated feeds could be removed from the live prawn. It was discovered, through a rearing experiment in BFRI ponds in Cox's



Inspection of experiment by PRICE & Chemonics staff

Bazar, that nitrofurans metabolites might be susceptible to elimination in live prawns by feeding them with a diet free from nitrofurans parent drug for a sufficient number of days in advance. If confirmed, this result would represent a great opportunity for the industry to reduce or eliminate the risk of international rejection of shrimp exports due to nitrofurans contamination. It should be noted that – once shrimp are dead, there is no method for removing accumulated metabolites from their bodies.

### **Support to processing plants on biosecurity and quality-related compliance**

During this quarter six MoUs were signed with shrimp processing plants (OSET, JSFL, JFFL, MUSF, RSFL, and MFPL) that will improve their biosecurity and quality related compliance through PRICE supported capacity building of their factory workers. PRICE will provide management trainings. Among these, two of the processing plants are located in Jessore. Out of the six processing plants, one processes and exports a significant amount of fish, in addition to shrimp. The rest of the processing plants mostly process and export shrimp and prawn.

PRICE is also providing technical assistance to MOFA Fish Processing Private Ltd, a contract grower in the Jessore region, to build their biosecurity capacity in the processing factory, and build their capacity to produce contamination-free frozen items specifically for export.

### **Information dissemination for promoting market linkages**

While meeting with Gazi Fish Culture Ltd., PRICE personnel learned that they use imported feed from CP, a Thai aquaculture input manufacturing company. Reportedly the parent company of Gazi abandoned production of shrimp feed in Bangladesh due to small demand and switched to fish feed due to the high price of soy cake fish meal, which is the main source of protein in shrimp feed. PRICE consultant shared the idea with Gazi that their parent company (Sabinco-a Saudi-Bangla joint venture) could manufacture their own required shrimp feed by importing relatively low cost soy cake from Brazil, instead

of from India or China. Even with the cost of freight, the difference in price results in overall cost savings.

### **Quantitative Results**

The shrimp subsector achieved approximately \$4.5 million in increased sales this quarter. GHERS, implemented by WFC, contributed the largest portion of this number, with over \$3.9 million. Din Bijoy Enterprise, a new enterprise in contract farming, increased their sales by approximately USD \$15,000. Satkhira Feed Mill, for its part, increased sales by over \$500 thousand.

The partners increased full time equivalent employment by 29, and investment by \$42 thousand. In this period, 40 farmers received assistance in workforce development skills, and 17 in management skill training.

The following table shows major accomplishments of the sector in the quarter:

<b>Performance of Shrimp Sub-sector (Apr-Jun 2010)</b>							
<b>Partners</b>	<b>Sales (USD)</b>			<b>Jobs</b>			<b>Investment (USD)</b>
	Domestic	Export	Total	Women	Men	Total	
<b>Din Bijoy Enterprise</b>	761	14,457	<b>15,217</b>	0	0.67	<b>1</b>	-
<b>Vairob Fish Agency</b>	-	-	-	0	0	-	-
<b>Mofa Fish Processing Private Ltd.</b>	-	-	-	0	0	-	-
<b>Modina Fish</b>	-	-	-			-	-
<b>N. Khulna Poultry and Fish Feed</b>	-	-	-	0	0	-	-
<b>Aqua Star Hatchery &amp; AgroComplex</b>	2,319	44,058	<b>46,377</b>	0	0	-	-
<b>Gazi Fish Culture Ltd.</b>	-	-	-	0	0.33	<b>0</b>	21,739
<b>Razu Enterprise</b>	-	-	-	0	0.29	<b>0</b>	-
<b>Mondal Fish</b>	-	-	-	0	0.00	-	-
<b>Satata Fish</b>	265	5,042	<b>5,307</b>	0.00	1.01	<b>1</b>	-
<b>Satkhira Feed Ind.</b>	25,282	480,353	<b>505,635</b>	0	7	<b>7</b>	-
<b>GHERS WFC</b>	196,500	3,733,500	<b>3,930,000</b>	0	20.23	<b>20</b>	20,000
<b>Total</b>	<b>225,127</b>	<b>4,277,409</b>	<b>4,502,536</b>	<b>0</b>	<b>29</b>	<b>29</b>	<b>41,739</b>

### Trainings in the shrimp sector April - June 2010

<b>Partner</b>	<b>Workforce</b>				<b>Productivity</b>			
	Training	Male	Female	Total	Training	Male	Female	Total
World Fish Center	2	39	1	40	2 (886 meetings)	6734	320	7054
<b>Shrimp Total</b>	<b>2</b>	<b>39</b>	<b>1</b>	<b>40</b>	<b>2</b>	<b>6734</b>	<b>320</b>	<b>7054</b>
<b>Grand Total (Aquaculture)</b>	<b>2</b>	<b>39</b>	<b>1</b>	<b>40</b>	<b>26</b>	<b>7713</b>	<b>521</b>	<b>8234</b>

# Leather

## A. Improving the Quantity and Quality of the Workforce

### Skills Development Program with Apex Adelch Footwear, Ltd.

This skills development program began in February, under the framework of a collaborative MOU between PRICE and the Leather Goods and Footwear Manufacturers and Exporters of Bangladesh (LFMEAB). The first group of 187 participants completed their training in April. A second batch – consisting of 218 men and women – is due to complete their training in July. The aim of this initiative is to develop 800 workers skilled in all three sections of footwear manufacturing: cutting, sewing, and finishing. All trainees are tested on safety, discipline, and knowledge about shoes and their components. The cutting department workers are trained on cutting direction, pairing, and machine pressure. The sewing workers are trained on skiving, splitting, folding, edge finishing, thread, needle, and machine adjustments. The finishing workers are trained on toe and heel lasting, machine adjustment, and finishing chemicals.

Of the 187 trainees in the first group, 127 women and eight men successfully completed the training and were offered jobs by Apex as probationers. They are now contributing to the main production line as 20 are employed in cutting, 80 in sewing and 35 in lasting/finishing operations.

### Workforce development with Landmark Footwear Ltd.

PRICE is facilitating another on the job skills development program for new workers at Landmark Footwear Ltd. premises, under the LFMEAB MOU. Started in May, the program aims at developing skills of 550 new workers in several batches (each batch for two months), over the next 12 months. PRICE is employing a master trainer with 25 years of experience designing and manufacturing footwear to coordinate the program. He is guiding three supervisors from LFL to train the new workers. The focus of the training is cutting/manipulation of leather, prefabrication and sewing, and lasting and finishing of shoes. The trainees are initially oriented with safety measures, discipline, and types of shoes and their components. The major areas of the training are as follows: in the cutting department, cutting direction, pairing, and machine pressure; in the sewing department, skiving, splitting, folding, edge finishing, thread, needle, and machine adjustment; in the lasting/finishing department, toe and heel lasting, machine adjustment, finishing chemicals and packing.

The first batch of 51 candidates began their training in May. After one month of in-depth training, 20 of these trainees were selected for their proficiency as apprentices in the main production line, starting in June. The training will be completed in July 2010.



Trainees at the LFL-LFMEAB-PRICE training program

### Workforce development with Jennys Shoes Ltd.

PRICE conducted this training program from December 2009-April 2010. Under the umbrella MoU signed between PRICE and LFMEAB, both parties collaborated in addressing the scarcity of skilled workers in the shoes industry. Fourteen supervisors and 61 new, unskilled workers were trained. These workers were hired through the reference of existing workers/supervisors. An advertisement at the training venue gate was also used to recruit trainees. PRICE appointed master trainer and conducted a training of trainers for the 14 supervisors to transfer technical knowledge of modern shoe making to the workers. The training was based on work instruction modules developed by PRICE with Jenny's experts during the program on the overall process of footwear manufacturing. The major focus of this training was: leather selection criteria, manipulation and cutting of selected leather for its best utilization, prefabrication and sewing of cut leather, lasting of stitched leather, finishing of shoes, and quality control.

On the basis of evaluation results conducted by the master trainer and the Jenny's authority, all 61 trained workers were offered full time jobs at various levels of operations by Jenny's which they all accepted. These trainees are in their production lines and contributing to the incremental production and sales of the sector through Jenny's.

### **B. Assistance to SMEs**

#### Linking SMEs to markets through the Aarong retail chain

This quarter PRICE continued to support an association of 13 SMEs known as the Leather Technologist SME Entrepreneurs (LTSE). PRICE helped the LTSE prepare samples of leather sandals and bags for Aarong, as well as a products catalogue. As a result, three of the SMEs are now Aarong's enlisted subcontractors, and two LTSE members have already received formal work orders worth Tk. 544,400. With the surge in their business, these SMEs are now planning to employ more than 50 new workers and invest in new machinery.

### *Increasing the competitiveness of Aarong subcontractors*

Lack of technical knowledge in efficient production processes and manipulation of raw materials, inaccurate costing, and outdated work practices are some of the reasons why small enterprises are inefficient and uncompetitive. At the request of Aarong, in June PRICE initiated a program to train 20 of its SME suppliers of leather goods. Through this pilot, PRICE aims first to educate the owners of small producer firms about the importance of making improvements in their operations, and then to include the workers of these firms in the education process. Areas of the training include: basics of leather, material savings and efficiency, production planning, quality awareness and workforce retention, and general management. There will also be a visit by the participants to a leading leather products factory to see best industry practices.

### *Promoting access to finance for SMEs*

PRICE organized a Lender- Borrower seminar on May 13th with the SME Foundation to help leather SMEs increase their awareness about access to finance through leading financial institutions.

The Lender-Borrower seminar took place at the Bengal Art Gallery, and was attended by 41 participants, including 23 SMEs, three financial institutions, and observers from International Finance Corporation (World Bank), Japan International Cooperation Agency, and LFMEAB. The seminar was divided into two sessions, outlined below:

***Session I. Technical-*** Mutual Trust Bank Ltd., MIDAS Finance, and Eastern Bank Ltd., each presented their financial specializations, the specific loan requirements of potential borrowers, and how companies can represent themselves effectively to gain attractive loans. The information session provided a platform where SME owners were able to voice their opinions, questions, and suggestions to the three leading financial institutions about their experience with banks and unfavorable banking requirements. The presentations were followed with an engaged discussion between the financial institutions and the SME owners. Many of the SME owners gave feedback to the institutions on what sort of loans would be beneficial for them, and different sorts of questions were raised regarding interest rates and other benefits to clients.

***Session II. Networking and individual meetings between SMEs and financial institutions-*** Following the initial session, the SMEs had a chance to make appointments with the financial institution they thought more suitable for their business. A total of 18 appointments were made, seven with one financial institution, six with another, and five with the third.

As a result of this event, Mutual Trust Bank has already expressed interest in Deya Leather to see their existing operation and facilities. PRICE will follow up on this and other business opportunities identified or stimulated through the workshop.

### Process up-gradation pilot with seven SMEs

PRICE signed an MoU in May to help seven SMEs become more competitive by providing technical assistance to upgrade their production process. With this upgrade, they will be able to capture more business from lead firms and partners. The aim of this pilot activity is to show the sector stakeholders, particularly SMEs, ways to become more competent in the market by reducing inefficiencies in their production processes in terms of costing, manipulation, inventory, and sequences of production. The selected SMEs were judged on the basis of the following criteria:

- Whether or not they made requests of PRICE to provide them with technical assistance to become competitive
- Sincere interest from the SME's management to new ideas and their implementation
- Willingness to cost share with PRICE and to share relevant information with other stakeholders

PRICE appointed an industry expert to assist the SMEs in performing the following activities:

- Identifying the production inefficiencies that are hindering competitiveness in terms of productivity, product quality and cost of production.
- Recommending actions and a timeline to address these inefficiencies.
- Guiding and assisting the enterprises in implementing these recommendations.
- Tracking and reporting the changes.



Before: poor handling of tools



After: Organized handling of tools

Although changing the mindset and traditional practices of SME shoe producers can be difficult, it is expected that beneficiaries will implement these recommendations in their factories and share this experience with other stakeholders. To date, three enterprises have already implemented several recommendations such as: using a brush adhesive application process, utilizing proper container lids, use of a working table instead of working on the floor, a tools management system, and the concept of “Production with Efficient Costing Exercise.” This intervention is expected to continue at least until August 2010.

### **C. Improving the Quality of Hides and Skins**

#### **Assessment of the 2009 flaying campaign**

Every year the Bangladesh leather sector procures 200-220 million square feet of raw skins/hides locally. Of this, approximately 40 percent is collected during Eid-ul-Azha (Qurbani). Unfortunately, due to lack of awareness and basic knowledge on flaying and skin preservation techniques among unprofessional butchers and inexperienced people who sacrifice cattle during Eid, Bangladesh is losing approximately 20 percent of the commercial value of its leather and leather products.

One of PRICE’s sector wide strategic activities aims to help improve the quality of raw leather through raising awareness on the proper flaying and preservation of hides prior to Eid-ul-Azha. This awareness campaign aims to instill a sense of social responsibility which will lead to taking better care of skins and hides of sacrificed cattle.

From May 31 to June 15 PRICE conducted a survey to assess the impact of the flaying campaign it organized in November 2009. A questionnaire was developed to ascertain whether the campaign was useful to the sector by producing tangible results such as less defects in the hides/skins, and whether the sector leaders were willing to support a continuation of this initiative. Fifteen tanneries from Dhaka were included in the survey, as well as several industry representatives.

The survey results show that from 2008 to 2009 there was a significant decrease in flaying cuts (26 to 23 percent) and in the percentage of fat, blood and meat in raw hides (32 to 26 percent), as well as an improvement in the curing process, although it is very difficult to quantify the responsibility of PRICE’s flaying campaigns in this result. The survey also produced a series of recommendations to improve possible future campaigns, including incorporating a greater participation by religious leaders and by tanners

### Raising Imam's awareness on proper flaying of hides/skins



Imams at the awareness trainings on proper flaying.

In order to increase the awareness of religious leaders regarding proper flaying practices, PRICE teamed with Asia Foundation's Leaders of Influence (LOI) program to conduct a training workshop for 100 Imams. The training took place at Imam Training Academy (ITA), Hazi camp, Pahartoli, Chittagong, on June 9<sup>th</sup>. The classroom training was followed by industry visits to Riff Leather and Madina Tannery, for a first hand understanding of the issues taught in class.

### **D. Quantitative Results**

Leather Products sector partners increased their sales by almost one million dollars during this quarter. Most of these sales were produced from interventions under the LFMEAB MOU for workforce development, while a lesser amount came from SME sales and from PRICE's joint work with the BLSC.

Apex Adelchi Footwear Ltd., an LFMEAB member, had appointed 75 new workers last quarter who were trained by PRICE under the tripartite training agreement between PRICE, LFMEAB and Apex Adelchi. Starting in April, Apex appointed 60 more workers who were trained under PRICE facilitation. As a result of employing these skilled workers, Apex's production and sales increased by over \$500,000 this quarter. Bay Footwear, another LFMEAB member, this quarter employed 13 people trained by PRICE, thus increasing sales by \$58,500. Jennys Shoes, from the same association, employed 61 PRICE trained workers and increased its sales by over \$280,000 in the same period, while Landmark increased its sales by almost \$50,000 this quarter.

LTSE member BAG was able to collect an order from a Japanese buying house abroad and Gallery Apex inside the country, as a result of the PRICE-organized "buyer-seller meet" in December 2009. BAG achieved increased sales of USD \$ 31,414.

As a result of PRICE's training on modern footwear technology and management, Raian Shoes (beneficiary of the PRICE-BLSC initiative) purchased new machinery and increased its production by 30 percent. They have achieved more than \$39,000 in additional sales during the quarter. Deya Leather, another beneficiary under the PRICE-BLSC initiative, has seen increases sales of almost \$22,000 this quarter and has set up a subsidiary production unit called Zenith Footwear to meet the growing demand for its products.

This quarter 155 new jobs were created by leather sector partners, of which 142 were for women. Investment in fixed assets grew by approximately \$42,000. Seven hundred

eighty-two people received assistance for workforce development, 80 percent of them women. One hundred twenty two SMEs received training in improving management practices, and seven in investing in improved technology.

The following table shows major accomplishments of the sector in the quarter:

<b>Performance of Leather Products Sector (Apr-Jun 2010)</b>							
<b>Partners</b>	<b>Sales (USD)</b>			<b>Jobs</b>			<b>Investment (USD)</b>
	Domestic	Export	Total	Women	Men	Total	
<b>LFMEAB</b>	<b>0</b>	<b>893,223</b>	<b>893,223</b>	<b>142</b>	<b>13</b>	<b>155</b>	<b>35,459</b>
Apex	-	504,630	<b>504,630</b>	127	8	<b>135</b>	<b>25,000</b>
Bay	-	58,500	<b>58,500</b>	-	-	-	-
Jennys	-	281,343	<b>281,343</b>	-	-	-	<b>7,319</b>
Landmark	-	48,750	<b>48,750</b>	15	5	<b>20</b>	<b>3,140</b>
Apex L/R Craft		-	-			-	-
<b>LTSE</b>	<b>26,087</b>	<b>5,327</b>	<b>31,414</b>	-	-	-	-
BAG	26,087	5327	<b>31,414</b>			-	-
<b>BLSC</b>	<b>60,870</b>	-	<b>60,870</b>	-	-	-	<b>6,478</b>
Raian Shoe	39,130	0	<b>39,130</b>			-	<b>3,435</b>
DEYA Leather	21,739	0	<b>21,739</b>			-	<b>3,043</b>
<b>Total</b>	<b>86,957</b>	<b>898,550</b>	<b>985,507</b>	<b>142</b>	<b>13</b>	<b>155</b>	<b>41,937</b>

### Trainings in the leather sector Apr- June 2010

<b>Partners</b>	<b>Workforce</b>				<b>Improved Technology</b>				<b>Management</b>			
	Training	M	F	Total	Training	M	F	Total	Training	M	F	Total
LFMEAB, APEX, ADELCHI (ongoing)	2	36	369	405								
Jennys Footwear LFMEAB	2	16	59	75								
Landmark	3	98	195	293								
LOI, Asia Foundation, PRICE									1	100	0	100
SASSY, BAG, Karigor, Kohinoor, Raian, Oasis, Deya (ongoing)	1	8	1	9	1	6	1	7				
SME Foundation, PRICE									1	20	2	22
<b>TOTAL</b>	<b>8</b>	<b>158</b>	<b>624</b>	<b>782</b>	<b>1</b>	<b>6</b>	<b>1</b>	<b>7</b>	<b>1</b>	<b>120</b>	<b>2</b>	<b>122</b>

## Equity Integration

PRICE has worked to improve the skills of women in all three sectors. Focusing on value chain setbacks, PRICE has worked to alleviate hindrances to the female workforce in Bangladesh. In this effort, PRICE attempts to create a more competitive business environment working with firms to build awareness of issues surrounding women's participation in these sectors.

In the aquaculture sector, PRICE provided training to 202 females on Fish Culture Productivity in collaboration with partners Rakhaing Development Foundation (RDF), Jano Seba Kendra (JSK), and WFC. Twenty one women farmers from TMUS received loans for fish farming; the average loan per person was Tk. 5,857 for a total of Tk. 123,000. As a result, these women are now able to contribute to family income more actively. Development of fisheries in the village has created employment opportunities for both men and women. Seventy percent of female family members are directly or indirectly involved in fish culture or fish related activities at present.

In the horticulture sector, 81 women participants were included in the trainings that collaborated with VHAKUBS, EFADF Agro-business, and AAS. The training was on improved and environmentally friendly vegetable production technology, and included contract farming systems aimed at increasing the awareness of women farmers and their involvement in vegetable field. Yard meetings on the use of organic fertilizer were organized for the women participants to ensure quality vegetable cultivation.

Community and open water fishing has been a traditional way of life in Bangladesh. Although traditional forms of fishing are being replaced by modern forms of aquaculture, fishing and fish farming in rural Bangladesh continues to be considered a male's responsibility. PRICE is working with women in organized fish farming groups to encourage their participation. The introduction of women into organized fish farming in household ponds has given a different dimension to aquaculture and as a result, housewives are generating economic activity that is leading to income generation, improved family nutrition, and women's empowerment.

Also during this period, PRICE implemented training programs in the leather sector for 627 female workers. The result was job creation for 155 persons of which 142 were female – or nearly 92 percent. They received Tk. 2,000-3,000 as salary plus benefits, and are now proudly contributing to their household income. These female workers are improving their standard of living by having the opportunity to work daily and generate consistent income.

## ANNEX 1

### PERFORMANCE INDICATORS

#### Performance of PRICE: Updated through June 2010

<b>Custom Indicator 1</b>	<b>Total value of sales increased</b>		
<b>Result of Apr-Jun 2010</b>	<b>Result till Jun 2010</b>	<b>Target FY 2010</b>	<b>Project Target</b>
\$ 10.83 million	\$ 38.63 million	\$ 40 million	\$ 200 million
<b>Custom Indicator 2</b>	<b>Total number of full-time jobs created</b>		
<b>Result of Apr-Jun 2010</b>	<b>Result till Jun 2010</b>	<b>Target FY 2010</b>	<b>Project Target</b>
1,051	7,027	10,000	40,000
<b>Custom Indicator 3</b>	<b>Total value of investment increased</b>		
<b>Result of Apr-Jun 2010</b>	<b>Result till Jun 2010</b>	<b>Target FY 2010</b>	<b>Project Target</b>
\$ 237 thousand	\$ 1.9 million	\$ 1.58 million	\$ 4 million
<b>Custom Indicator 4</b>	<b>Number of persons participating in USAID workforce development programs</b>		
<b>Result of Apr-Jun 2010</b>	<b>Result till Jun 2010</b>	<b>Target FY 2010</b>	<b>Project Target</b>
822	2,881	3,700	15,000
<b>Custom Indicator 5</b>	<b>Number of staff (workers and managers) trained on key issues of Bangladesh Labor Law 2006*</b>		
<b>Result of Apr-Jun 2010</b>	<b>Result till Jun 2010</b>	<b>Target FY 2010</b>	<b>Project Target</b>
0	304*	340	340
Remarks	Earlier reports show 339, which was from data was taken over telephone from BSFF. Later, when the BSFF Training Report was submitted it showed 304 staff trained until June 2010.		

<b>Common Indicator 1</b>	<b>Number of firms receiving USG assistance to improve management practices</b>		
<b>Result of Apr-Jun 2010</b>	<b>Result till Jun 2010</b>	<b>Target FY 2010</b>	<b>Project Target</b>
189	4,919	2,000	8,750
<b>Common Indicator 2</b>	<b>Number of MSMEs receiving USG-supported assistance to access bank loans or private equity</b>		
<b>Result of Apr-Jun 2010</b>	<b>Result till Jun 2010</b>	<b>Target FY 2010</b>	<b>Project Target</b>
21	2,297	1,240	7,025
<b>Common Indicator 3</b>	<b>Number of firms receiving USG assistance to invest in improved technologies</b>		
<b>Result of Apr-Jun 2010</b>	<b>Result till Jun 2010</b>	<b>Target FY 2010</b>	<b>Project Target</b>
1,969	15,308	14,150	30,250
Remarks	Target figures in common indicators revised compared to last annual report.		

## ANNEX 2

### Performance Measurement

#### The Indicators:

Performance of the project and of the three sectors (Aquaculture, Leather and Horticulture) has been measured using eight defined 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:

- i. Indicator 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.
- ii. Indicator 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.
- iii. Indicator 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.
- iv. Indicator 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.

It will give the number of persons participating in USG-funded workforce development programs including, technical and vocational programs and workforce readiness programs.

- v. Indicator 5: Number of staff (workers and managers) trained on key issues of Bangladesh Labor Law 2006:

It will give the number of persons (workers and managers) participating in USG-funded training programs on key issues of Bangladesh Labor Law 2006.

The common indicators are as follows:

- i. Indicator 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.).
- ii. Indicator 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.  
Number of micro, small or medium enterprises who are receiving assistance from USG supported sources to obtain bank loans or private properties.
- iii. Indicator 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.

#### 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 taking suggestions from the technical team. From time to time, it has been modified to fit the project requirement.

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 two ways: partner interview, and, sample survey. 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. Format for recording the gathered information were designed by the M&E. 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 the quality of data.

The second method for data collection, sample survey, has been used because 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 900), sample survey method has been used. These surveys can be of two types: a) with statistically viable sample size, b) with a minimum sample size of 30 or larger, to approach to normal distribution.

For type a, statistically viable sample size is calculated beforehand considering the character of population to be surveyed. Professional survey teams work 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 are provided by PRICE M&E. Sample points are selected at random. It has been decided PRICE will conduct this type of full-fledged surveys only annually, at the end of September, from now on. Cost and time required for conducting this type of survey for each partner with combined body of micro enterprises were considered huge to be conducted quarterly.

For type b, a minimum sample size of 30 or larger is taken. Statistical viability behind such decision is that when the sample size is greater than 30, the distribution approaches normal distribution. Also the homogeneity in the population (similar type of land, weather, availability of inputs, market linkage, sharing of knowledge etc.) is considered here. For the quarterly reports, this type of small surveys are conducted from now on. However, these results will be verified during the future annual surveys.

#### Data Analysis:

The collected data are checked by PRICE technical team and M&E, to find out any unusual trend in data, outlier etc. M&E Team conducts visit to some partners to verify collected data. If any discrepancy is observed, it is consulted with the technical team before correction.

Then the data is processed and analyzed by the PRICE M&E. Data from sample surveys is extrapolated for getting the figure for the whole populations. The performance period data is compared with the baseline and the resulting change is taken as performance. All the partners' performances are summed up for getting the aggregate performance for each sector. Then the three sectors' performance is added to get the project performance.

Attribution:

Obviously PRICE alone is not attributable for the total improvement observed by the partners. However, considering the difficulty in isolating attribution for agro sector where there are a multitude of variables that are impossible to control or easily predict (such as weather and commodity prices), this report simply takes PRICE as one of the attributable factors behind the improvement.

## Annex 3

# Market Linkages Open a New Era for Young Entrepreneurs in the Leather Sector

**PRICE SMEs are linking to large local retailers- selling their goods to reach a broader market**



*SMEs showcasing their leather products to a local buyer.*

***“It’s a great achievement for young entrepreneurs like us to be enlisted by Aarong as their regular suppliers. This is a dream come true for all the young entrepreneurs working in the leather sector,” –Md. Habibur Rahman- Managing Director of Sassy***

## **CHALLENGE**

One of the constraints limiting Bangladesh’s SME growth in the leather sector is the lack of exposure to buyers and limited access to markets. In addition, owing to limited information from buyers, manufacturers often find themselves producing goods that are not trendy or appealing to the public, thus limiting demand for their products.

## **INITIATIVE**

PRICE’s works to improve the competitiveness of the Leather Sector promoting its growth and generating much needed employment. With this in mind, PRICE identifies promising entrepreneurs in the leather industry and assists them through product development workshops, market linkages, and creating access to finance through networking and meeting events.

## **RESULTS**

In an initiative to foster business linkages, PRICE established a dialogue with one of Bangladesh’s most prominent retailers- Aarong, to explore the potential of linking producers to the popular retailer. As Aarong was in the market to identify new subcontractor producers, PRICE organized a networking event with a group of SMEs to meet with the retailers. The linkages workshop was followed by a showcasing of the SMEs’ products at Aarongs’ Tejgaon corporate center on January 11, 2010. PRICE organized and assisted seven SMEs in preparing for the event and provided support to develop a product catalogue for the SMEs to distribute. In addition, PRICE facilitated the sample development process of two SMEs which were selected by Aarong to be its contract suppliers. This is one example of PRICE promoting linkages for SMEs to large, well known firms in Bangladesh and others are soon to follow.

# Hobby Turned into Full Time Job

**PRICE is working with rural fish farmers in improved fish farming techniques to help generate more income and opportunities.**



*“PRICE has helped me to increase my fish production by teaching me new fish farming techniques that have provided additional income to my family” - Zakiul*

Zakiul Islam is a successful fish farmer who started fishing as a hobby. In 2005 he joined the Muroil Matsha Chashi Samity fish farmers association, and in 2008, he started cultivation of different varieties of fish following traditional methods.

Last year Zakiul was a participant in a PRICE supported training program teaching improved fish farming techniques, pond preparation, purification, density, diseases, proper usage of pesticide, and fish feed preparation. Before the training his investment for one shift was 250,000 Tk, and upon harvesting 5.5 tons of fish he was able to sell it for 325,000 Tk.

Applying his knowledge from the training, this year Zakiul cultivated the same variety of fish, investing 1,400,000Tk in one shift in the same size water body. He sold more than 25 tons of fish for 1,900,000Tk, while using 125 kgs of fish for his family’s own consumption, and also distributing the fish among his neighbors. Now the fishing business is Zakiul and his family of six’s main source of income. Moreover, he is even able to take on the educational cost of his sister’s higher study. “In the future I dream of expanding my business through availing low interest loans from financial institutions with the additional linkage support from PRICE”, says Zakiul.

# Proper Production and Harvesting Techniques Increase Productivity and Generate Profit

## Mango farmers and consumers benefit from safe and chemical-free mango production



Photo: PRICE

*Chemical-free mangoes at the mango fair*

***PRICE - supported technical supervision and guidance to Kansat Mango Farmers Multipurpose Cooperative Society Ltd. ensures good yield, quality mangoes and direct marketing from the producers' garden to the consumers.***

U.S. Agency for International Development  
[www.usaid.gov](http://www.usaid.gov)

The use of hazardous chemicals for ripening immature mangoes has been a crucial problem in Bangladesh. This deteriorates the quality of the fruit and constitutes a threat to human health. At the same time, Bangladesh is not self sufficient in fruit and vegetable production. PRICE is helping to increase the production of fruits and vegetables in a safe and sustainable way.

Through its work with Kansat Mango Farmers Multipurpose Cooperative Society Ltd. (KMFMCSSL), a formally registered association, PRICE assisted 251 mango farmers and wholesalers both theoretically and practically in safe and chemical-free mango production, pest management, mature mango harvesting and post harvest handling methods such as grading, sorting, cleaning and packaging to retain highest quality for the benefit of producers and consumers. During the growing season technical supervision and guidance were ensured to achieve good yield and quality by a PRICE hired consultant from the Mango Research Station of Chapainwabganj. Thus association farmers did not require using harmful chemicals for ripening mangoes. PRICE supported the association with marketing expertise and direct linkages to marketing channels, where mangoes can go directly from the producer's garden to the consumer. As such, the KMFMCSSL, in collaboration with PRICE and relevant stakeholders, organized a mango fair in several outlets all over Dhaka city.

Md. Suman Ali, a member of KMFMCSSL, got PRICE supported trainings on mango harvesting, naturally ripening without chemicals and on marketing. "Many customers come here every day to buy mangoes. They tasted the mangoes at home and came back for another 10 -20 kgs. They started relying on us as the mangoes taste different due to its natural ripening than the ones they get in the city process. Even I am getting 20-40% higher price here", says he, while selling mangoes in an outlet at the Gulshan Society Park. A consumer, an executive member of the Gulshan Society expresses, "I got information from the society that I would get chemical free mangoes here. The mangoes that we buy in the city are mostly chemically ripened. Here I have tasted the mangoes which have the original smell, whereas the ones with chemicals do not. I came back again to buy some more."