USAID FROM THE AMERICAN PEOPLE | PRICE POVERTY REDUCTION BY INCREASING THE COMPETITIVENESS OF ENTERPRISES

# QUARTERLY PROGRESS REPORT

**BANGLADESH POVERTY REDUCTION BY INCREASING THE COMPETITIVENESS OF ENTERPRISES (PRICE)**
**APRIL 1, 2011 - JUNE 30, 2011**

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

# QUARTERLY PROGRESS REPORT

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

**APRIL 1, 2011 - JUNE 30, 2011**

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

# CONTENTS

# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AAS | Agriculture Advisory Society |
| AHFC | Allahwalla Hatchery & Farming Complex |
| AMBS | Alamdigi Khudra-Motsya Beboshahi-Somity |
| BBMS | Bamunji Beel Motsojibi Somity |
| BCLT | Bangladesh College of Leather Technology |
| BFFEA | Bangladesh Frozen Foods Exporters Association |
| BMCS | Bhaluka Motsya-Chashi Samaboya-Somiti |
| BMET | Bureau of Manpower, Employment and Training |
| BMH | Bakolia Matsya Hatchery |
| BSIL | Bengal Shoe Industries Ltd. |
| BTEB | Bangladesh Technical Education Board |
| CAPL | Chitralatha Aqua Park Ltd. |
| CBT | Competency Based Training |
| COEL | Centre of Excellence for Leather Skill Bangladesh Limited |
| CST | Closed System pond Technology |
| DBE | Din Bijoy Enterprise |
| DoF | Department of Fisheries |
| DMBBS | Digherkanda Mastopona Beboshahi-Kallan Bohumukhi Somabaya Somity |
| DSKS | DEESHA Samaj Kallyan Sangstha |
| DU | Dhaka University |
| EF | Extension Facilitators |
| ETP | Effluent Treatment Plant |
| EU | European Union |
| GAP | Good Aquaculture Practices |
| GFL | Gazi Fish Ltd |
| GHERS | Greater Harvest and Economic Return from Shrimp |
| GHFPL | Golden Harvest Sea Food and Fish Processing Limited |
| GIMCS | Global Islamic Multipurpose Cooperative Society |
| GKSSE | Grameen Krishok Shahyak Sangstha Enterprise |
| GoB | Government of Bangladesh |
| GUKED | Gram Unnayan Karma Enterprise Development |
| HACCAP | Hazard Analysis and Critical Control Points |
| IFC | International Finance Corporation |
| ILO | International Labour Organization's |
| IPM | Integrated pest management |
| IVLP | International Visitors Leadership Program |
| JSK | Jano Seba Kendra |
| KMCSS | Kahaloo Matsya Chashi Samoby Somity |
| KMFCSL | Kansat Mango Farmers Cooperative Society Limited |
| KMPUSS | Mymensingh and Kahaloo Mosta-pona Utpadonkari Samaboya-Somiti |
| KMPUS | Kahaloo Matsya Pona Utpadonkari shomoby Shamitee |
| LFMEAB | Leather Goods & Footwear Manufacturers & Exporters Association of Bangladesh |
| LTSE | Leather Technologist Small Entrepreneurs |

| | |
|---|---|
| MFBA | Muktagacha Fish-Farmers & Business Association |
| MFFH | Ma Fatima Fish Hatchery |
| MMCS | Murail Matshya Chashi Shamitee |
| MMCSS | Mourail Matsya Chashi Samoby Somity |
| MOU | Memorandum of Understanding |
| MTT | Modified Traditional Technology |
| NBTH | North-Bengal Thai-Tech Tilapia Hatchery |
| NFC | Nowapara Fisheries complex |
| NFMC | Nazirertek Fish-dryers Multipurpose Cooperative Somity |
| NGO | Non-government organization |
| NMS | Nokla Motsojibi Somity |
| NTH | Niribilli Tilapia Hatchery |
| NTTH | North Bengal Thai Tech Tilapia Hatchery |
| NVQF | National Vocational Qualification Framework |
| PBKS | Polli-Bodu Kallan Sanghtha |
| PCR | Polymer Chain Reaction |
| PFPFA | Phulpur Fish and Prawn Farmers' Association |
| PL | Post-larvae (Shrimp) |
| PMCS | Patchpir Bazar Matsya Chashi Shomoby Samity |
| PMH | Pori Matsya Hatchery |
| RDF | Rakhaing Development Foundation |
| RFH | Rupali Fish Hatchery |
| SABINCO | Saudi-Bangladesh Industrial & Agricultural Investment Company Ltd |
| SBH | South Bay hatchery |
| SBMK | Sambridhi Bhomuki Matshya O Gobeshona Kendra |
| SBMUGK | Sumridhi Matsya Unnayan O Gobeshona Kendra |
| SMCS | Sherpur Matsya-Chashi Samaboya-Somiti |
| SME | Small and Medium Enterprises |
| SMEF | SME Foundation |
| SMH | Shuvro Matsya Hatchery |
| SMSC | S&M Shrimp Culture Ltd |
| SMSFL | SMS Feeds Limited |
| SSFP | Smiling Sun Franchise Program |
| SSS | Society for Social Service |
| SSURD | Society for Sustainable Development for the Rural & Urban Area |
| TBMP | traditional best management practices |
| TFFS | Trisal Fish Farmers-Business Somity |
| TMCS | Talora Ancholik Motsya-Chashi Samaboya-Somiti |
| TMUS | Trinomool Manobik Unnayan Sangstha |
| TSMS | Tarakanda Satata Matsya Somity |
| TVET | Technical and Vocational Education and Training |
| WFC | World Fish Centre |

## Executive Summary

The second quarter of this year (April - June) 2011, PRICE continued to build on its activities in all three sectors – horticulture, aquaculture, and leather products.

For the horticulture sector, this quarter started with the critical period for mangoes. This year, mango production was less than last year. In this quarter, PRICE supported mango farmers of Chapainwabganj and Jessore area for post harvest mango handling. As a result, they had good yields and fewer post-harvest losses.

PRICE assisted several potato farmer associations and enterprises to store their seeds and table potatoes in cold storage by following proper post-harvest handling methods and utilizing efficient technology and better management capacity as well specialized cold chambers. PRICE also supported to continue exporting table potato (Granola variety) mainly to Malaysia by providing technical assistance in curing, sorting, grading, cleaning and packing as per the importers' orders. Technical assistance was provided to the tissue culture labs through undertaking proper fumigation for disinfection, cleaning and restructuring, and procuring chemicals and equipment for next year's production of plantlets.

PRICE has been supporting thousands of small eggplant farmers in the Jessore and Bogra areas to identify and solve their production related problems, in particular seedling raising techniques, pest management, and harvesting which helped them to minimize the cost of production. PRICE supported partners also assisted farmers in marketing their produce.

Horticulture sector partners increased their sales by USD 2.3 million in this quarter, 717 jobs were created and USD 16.6 thousand of new investment was created during the quarter.

In the aquaculture sector, PRICE linked aquaculture partners (fish and shrimp value chain actors) to institutional credit sources in South-Western (greater Jessore and Khulna) and North Bengal (Greater Bogra, Pabna, Rangpur and Rajshahi) regions, fish hatcheries to quality grade brood sources, nursery owners to quality seed producing hatcheries, and fish farming associations to quality seed-producing centers, nurseries and quality grade feed producing and marketing centers; and facilitated class room and hands-on trainings on farm management for different fish species, from pond preparation, farming managements, to harvesting and marketing. Since this quarter represents the beginning of monsoon in Bangladesh farming preparations for rain-fed based aquaculture got the momentum during this reporting period and improved farming and farming management related training were carried out among most of the farming association based partners. Besides, improved trainings for cage farming association members also initiated during this quarter at Chandpur region. PRICE also signed memoranda of understanding (MOU) with Bangladesh Frozen Foods Exporters Association (BFFEA) to create mass awareness among all actors in fish and shrimp supply chain and value chain and mitigation measure on export hindering obstacles. In addition, April-June is the peak season for shrimp farming and beginning of harvest, it is vital to make certain steady supply of disease-free and traceable post-larvae (PL) and other inputs to farmers under GHERS initiatives. During the reporting period,

PRICE persistently assisted private PL testing labs to continue testing and to increase supplies of screened PL for farmers. Under the Greater Harvest and Economic Return from Shrimp (GHERS) project, PRICE promoted all three types of improved farming practices (CST, MTT and BMP) in expanded geographical locations in Bagerhat, Khulna and Satkhira regions. Besides GHERS which is located in greater Khulna areas, PRICE arranged improved farming trainings for shrimp farmers in Cox's Bazar and promoted virus-free, screened PL among farmers in Cox's Bazar region. PRICE arranged its 2 fish and shrimp based partners' participation at in-country study trips in Mymensingh and Bogra areas. PRICE also arranged a visit for USAID officials to observe its aquaculture partners activities in Mymensingh-Jamalpur-Tangail and Jessore-Khulna regions.

In job creation, Aquaculture sector partners achieved 1,242 new jobs in this quarter. Pori Motshya Hatchery, Kahaloo Fish Association, GHERS initiative and some shrimp processing plants contributed most to create the jobs.

USD 796 thousand of investment was generated in Aquaculture sector during the period. Farmers of Bhaluka Fish Assocaition, Kahaloo Fish Association, SSURDA and Adamdighi Somity contributed to increase investment in Fish subsector. GHERS initiative mainly contributed to increase investment in Shrimp subsector.

In the leather product sector, PRICE focuses many of its activities on workforce development. In this quarter, PRICE arranged linkage building workshop between leather sector SMEs and large enterprises to generate sub-contract business. In addition, linkage building meetings also held between the SMEs and different commercial Banks for access to finance and between the service providers as well.

PRICE also supported one of the young female entrepreneurs to participate the International Visitors Leadership Program (IVLP) in the USA which also helped to promote Bangladeshi leather products in international markets.

To develop the workforce of this sector, PRICE also supported to arrange several workshops. However, Centre of Excellence for Leather Skill Bangladesh Limited (COEL) started its operation in this quarter where PRICE will play a key role financing and overseeing the COEL initiative.

Moreover, a new potential cluster was identified in the early May. PRICE and SME Foundation jointly started working on to develop this group.

**PRICE PERFORMANCE Apr-Jun 2011**

| *INDICATOR* | ACHIEVED |
|---|---|
| *Sales increased* | $26.4 million |
| *New jobs created* | 2,595 |
| *Investment increased* | $813 thousand |
| *Farmers/SMEs trained in technology* | 17,931 |
| *Farmers/SMEs trained in management* | 6,200 |

In this quarter, partners in Leather products sector increased their sales by USD 6.4 million and 636 jobs were created by the partners in the sector.

| QUARTERLY HIGHLIGHTS | |
|---|---|
| ***Note: Horticulture sector highlights will be added later*** | • BFFEA for the first time signed a MOU with PRICE to initiative a mass campaigning to create awareness on responsible supply and value chain management without alleged malpractices and adulterations of exportable fish and shrimp.<br><br>• Two workshops on access to finance were organized at Bogra and Jessore regions and Bangladesh bank representative attended at Bogra workshop. Besides, 12 public and private bank representatives in Jessore and 14 representatives in Bogra participated in those workshops.<br><br>• PRICE arranged two in-country study trips among PRICE partners. As a result of observing mono-sex tilapia farming techniques with sinking and floating feeds in Bogra, three member beneficiaries of one partner copied these techniques and initiated the farming of this species in Jessore area.<br><br>• Formal training on improved cage farming has initiated in Chandpur and Lakshmipur areas during this reported period. The cage farming trainings promotes commercial and holistic approaches of indirectly protecting river biodiversity.<br><br>• PRICE initiated extending the GHERS initiative with WFC during this period so that the subcontract could proceed at par with PRICE tenure.<br><br>• The screened bagda PL are tested and certified in Cox's Bazar but their uses are mostly in Greater Khulna region. PRICE has taken initiatives jointly with two partners in Ukia and Teknaf regions to popularize screen PL. |

| | |
|---|---|
| | • The USAID representative Aniruddha H. Roy together with PRICE COP and TLA visited aquaculture partners at Mymensingh, Tangail and Jamalpur and regions. He highly praised the PRICE supported farmer's efforts to maximize production of mono- mixed and polyculture of diverse fish species by micro, small, medium and large farmers. This initiative lead to higher income, improved family nutrition, women participation and food security.<br><br>• The government has requested for approval from the High Court for an additional two years to finalize the establishment of a central Effluent Treatment Plant (ETP) in Savar. This ETP will allow the environmentally hazardous tanneries to move from Dhaka to Savar. The original deadline to establish the central ETP and shift the tanneries from city's Hazaribagh area was April 30 of this year. The government has twice previously sought two years from the High Court for the relocation, but was only granted an extension of six months by the court. According to the concerned ministry this delay is happening due to lack of expertise, not a shortage of funding.<br><br>• The Centre of Excellence for Leather Skill Bangladesh Limited (COEL) has begun operations as a one point service center for the sector. As such, it will provide sector-wide services of workforce development, product development, laboratory tests, etc. The services start with workforce development, showcased by the launch of the first Apprenticeship Pilot Program for Leather Sector Workers of Bangladesh at the COEL Centre, Kaliakoir, Gazipur. This COEL initiative was supported by the USAID funded PRICE project and the International Labour Organization's (ILO) TVET Reform Project.<br><br>• With Prime Minister approval, the Education Ministry decided to make Bangladesh College of Leather Technology, BCLT, an institute under Dhaka University (DU). Last year, academic and |

| | |
|---|---|
| | administrative activities of BCLT, the country's only educational institution of its kind, came to a near standstill due to acute shortage of teachers and session jam. Although the college requires a minimum ration of 84 teachers to 800 students, it was running with only five teachers, making it hard to ensure quality education. The problem reached such a point that for the past two semesters the college did not admit students for the first year honors courses, said college authorities. "Once BCLT is made an institute, the university authority can appoint teachers anytime through syndicate," the Education Minister said. |

# HORTICULTURE SECTOR

April is the cruelest month of the year with high temperatures accompanied by dry winds. This is one of the critical periods for mango, since fruit dropping is enhanced by this typical dry hot environment. This year is considered an off year for mango and blooming was not adequate in the south and part of north. However, 80% of the plants flowered in Chapainwabganj due to favorable climate and efforts taken by the farmers. But, due to the climatic conditions, inflorescences withered followed by fruit dropping in Jessore, Rajshahi and some parts of Nawabganj. This contributed to poor production compared to the same period of last year. Overall, the yield in the southern belt was less than 60% of the last year, but the situation was better in northern area- the main mango growing area of the country. Production in one PRICE support area, Shibganj, Chapainwabganj district, had a fairly good yield compared to other parts of the country. According to preliminary estimates, this year approximately 50,000 MT of mangoes are likely to be produced on 8,667 hectares of land in Rajshahi and some 125,000 MT of mangoes are expected to be produced on 23,070 hectares of land in the Chapainawabganj district, the two major mango producing areas of the country. PRICE supported mango farmers of Chapainwabganj and Jessore area they had good yields and fewer post-harvest losses.

Potato production during the year was good; with nearly 8 million MT. Export performance was better than the preceding years. Potato seed production from tissue cultured clean material increased and many enterprises made efforts to store them in separate stores, following better post-harvest practices. PRICE-supported enterprises successfully produced clean seed material and distributed it to the farmers, contributing to good yield. PRICE also supported two enterprises as they entered into the international export market.

Eggplant production during the period was quite satisfactory for PRICE-supported farmers and they were able to fetch a good price for their product. PRICE helped several enterprises train farmers on modern production technology, introduced new varieties, and extended the cropping cycle through innovative approaches, resulting in higher yield and better prices.

## A. POTATO

Seed and table potatoes harvested during this season continued to arrive in the local market during April – May from the farmers own home stocks. Cold storages across the country closed their doors for this season. The pace of export also decreased during April due to high temperatures, low supply in the local market, and rising prices. The market price of table potato during the period went up from BDT 4.00 - 6.00 at the farm gate to BDT 7.00-10.00 per kilogram due to increased local demand and export, helping farmers to cover their expenses and make additional profit. PRICE assisted several potato farmer associations and enterprises to store their seeds and table potatoes in cold storage by following proper post-harvest handling methods and utilizing efficient technology and better management capacity as well specialized cold chambers. PRICE also supported two enterprises to continue exporting table potato (Granola variety) mainly to Malaysia by providing technical assistance in curing, sorting, grading,

cleaning and packing as per the importers' orders. Technical assistance was provided to the tissue culture labs through undertaking proper fumigation for disinfection, cleaning and restructuring, and procuring chemicals and equipment for next year's production of plantlets.

### *Promoting Export of Potato to Mainstream Market of Malaysia*

With PRICE's support, export of table potato began in March when the first consignment of granola potato was shipped to Tesco-Malaysia and two other Malaysian buyers. The shipments continued throughout April – May, 2011. Golden Harvest exported 267.17 MTs of granola potato produced by the contract farmers of GUKED, Bogra to Tesco-Malyasia in refrigerated container after proper grading, sorting and packing in special 15 kg special packs. Ferdous Biotech, another PRICE supported enterprise, also exported 107 MT of granola potato to a Malaysian exporter (Gateway China BHD) of which the initial 93 MT was exported in open container and the rest of the consignments were sent in refrigerated containers due to increased temperatures. The enterprise also exported 67 MT of granola potato to Vietnam (Power Dynamic Limited) through Malaysia, a new destination for Bangladeshi potato. PRICE supported Ferdous Biotech with proper grading, sorting, cleaning, and bagging in 5 kg and 10 kg nylon meshed bags. Ferdous Biotech exported table potato worth USD 43,095. Due to these efforts, contract farmers received a better price, revenue of the enterprises increased, they now have an established good linkage with exporters, and Bangladesh earned foreign exchange. Both farmers and the exporters learned the stringent post-harvest handling requirements of potato for export. While the potato exported from Bangladesh usually only goes to Bangladeshi ethnic markets in very small quantities, high end market segments are now being catered to due to PRICE's efforts to ensure better quality and standard packaging of the potatoes.

### *Supporting the Needs of the Processing Industry*

Considering the growing demand for processing types of potato from processing industries (in particular those types used for crisps and French fries), PRICE supported M/S Sajib Seeds in the production of Lady Rosetta, a processing type of potato introduced recently in the country that is suitable for crisps. During this quarter, M/s Sajib Seeds signed a deal with Quashem Food Ltd., a crisp producing company, to supply processing types of potato. PRICE provided technical support in the proper curing, skin finish and, grading of size and quality of potato suitable for the machine. Sajib seeds supplied 71.85 MT Lady Rosetta variety of potato worth USD 12,317 from Saidpur, Nilphamari to the company's factory in Gazipur, Dhaka.

PRICE also supported Golden Harvest Agro Industries Limited, a frozen and snacks food producing company to develop some potato-based food products and helped to minimize waste in the production of French fries. PRICE invited a volunteer through the USAID-funded Farmer to Farmer program to support the company and help build capacity in June. Mr. Cilfford Wener, an experienced US food expert, demonstrated frozen food plant management and standard cleaning and sanitizing practices; improved productivity practices; assisted with recipe

formulation for new internationally accepted products; demonstrated food handling for safety practices; and discussed maintenance, repair and use of production machinery. Ten direct trainees and 200 indirect trainees were given hands-on training on different aspects of the production process and HACCAP. Mr. Wener developed a pilot recipe structure and the first phase recipes for a variety of new products, incorporating existing local preferences. He also conducted factory floor training and demonstrations. Mr. Wener developed several new food products such as potato nuggets/ tots (from French fry scraps) , vegetable pizza, onion rings with tempura, onion rings with bread crumb, vegetable tempura, chicken strips , chicken wings, meatballs, chicken tempura, apple pie etc. Golden Harvest reported that they benefited great from the support and requested additional support.

*Strengthening Tissue Culture Laboratories*

As a part of strategic interventions to improve the capacity of the potato sector, PRICE continued its effort in supporting tissue culture laboratories through its resource persons. This was done through activities such as sterilizing through fumigation after the season to avoid contamination, sourcing chemicals and preparing nutrient media, using proper plant growth regulators, basal nutrient salt, preparing and calibrating autoclave, laminar air flow machine, preparing the incubation room with proper temperature, installing 3000 LUX light in the lab and other instruments, and initiating potato meristem culture for the next season.

During this period, PRICE supported three organizations: Potato Seed Growers Cooperatives, Ferdous Biotech, and Rural Development Academy in preparing their laboratories for next year's plantlets production and building their capacity and human resource development for running tissue culture laboratories. This will help ensure disease-free plantlets of different varieties of potato, including processing types, will be produced efficiently to cater the demand of the industry and farmers will have better access to disease-free potato seeds at reasonable prices. A standard protocol has been developed for all the laboratories so that each of the laboratories follows the same basic protocols.

## B. EGG PLANT

Harvesting of the late winter eggplant plantings was in full swing during April and May. PRICE supported farmers had good yield and earned better market prices due to the relative better quality of their produce. This was achieved through proper care taken during the production period, in particular better intercultural operation and pest management. The cost of production decreased significantly due to lessened use of pesticides and adopting an environmentally friendly IPM approach. Farmers who had abandoned eggplant cultivation and lost one of their cash crops came back due to the appropriate and successful interventions provided by PRICE.

PRICE has been supporting thousands of small eggplant farmers in the Jessore and Bogra areas to identify and solve their production related problems, in particular seedling raising techniques, pest management, and harvesting. This support has helped minimize the cost of production for the farmers. PRICE supported partners also assisted farmers in marketing their produce.

*Improving Knowledge and Skills of Eggplant Farmers on Adoption of Scientific Approaches to Cultivation*

Although eggplant is one of the most prized crops for small land holders, the yield of this crop has been deteriorating in recent years and farmers have been unable to control fruit and shoot borer insect and other diseases, even after spraying three to four times in one week. Eggplant farming has become unprofitable for many farmers and environmental hazards, including risks to local populations, have increased significantly. PRICE is supporting eggplant farmers through its partners in Jessore, Khulna, and Bogra areas by addressing their problems. During this quarter PRICE held a two-day comprehensive training on "Improved Technology for Eggplant Production" for 270 egg plant farmers in Jessore.


Training session for Eggplant Farmers held in April at Gourighona Union Parishad Auditorium, Jessore

In April, Muktir Alo Agro Business, a Jessore-based agro –enterprise organized four groups of 30 farmers each (total 120 farmers) for a training on "Improved Technology in Eggplant Cultivation through Contract Farming" at Gourighona Union Parishad Auditorium.


Training session for Eggplant farmers held at in Mohinikathi

Agricultural experts from Jessore and Khulna conducted the training sessions covering a wide range of topic including seedling raising techniques, land preparation, transplantation, fertilization, top dressing, irrigation, pest management – in particular biological control measures, and post-harvest handling. Participating farmers were from the Shamontokathi, Vorotvina, and Goirighona villages of Keshobpur Upazilla, Jessore. PRICE helped Krishok Bondhu Karmashuchi organized a training for 150 contracted eggplant farmers from Jhikorgacha Upazilla. Also in April, this training was held for five different groups of farmers and included topics such as "Improved Technology on Eggplant Cultivation through Contract Farming" at. The training was facilitated by senior agricultural experts of the districts and the Upazilla agriculture officer.

Farmers of these two areas grow eggplant in a season where it is difficult to get good yield. This crop is known as *AUS* Egg plant and is planted in April and harvested starting in mid-June. During this time, pests are prevalent and the weather is hot and dry. Irrigation and pest

management are two critical issues facing these farmers Training and technical support provided to the farmers during this quarter helped increase their yield. Farmers in general were able to increase the productivity of eggplant by 70% - 80% over the previous period, and the cost of pesticide was reduced by one fourth compared to the previous period. Before these trainings, pesticides were used on alternative days, but after the training the pesticide spraying interval was reduced from 3-5 sprays in a week to once in a 10-12 days interval, depending on pest prevalence.

*Organizing Field Schools for Eggplant Farmers*

Organizing vegetable crop-based field schools in the farmer's field with their participation under the guidance of experts during critical growth stages is a new concept of teaching- learning process. This process helps farmers to identify problems by themselves and solve them under the guidance of an expert. This process is cost effective, conducted directly in the field, and the learning is embedded in the community.

Problem solving session at Farmers field school

Problem identification session at a farmer's field school

During this quarter, PRICE supported PRIDE Agro-Enterprise to organize four field schools during four critical growth periods of eggplant. In each period, farmers were given the tasks of assessing crop conditions of all the nearby eggplant plots of the village and identifying the growth condition and stage, plant health, soil moisture level, insect- pest population status, fertility, drainage situation, and any visible abnormality. They then determined solutions to any problems found under the guidance of the expert and acted accordingly to resolve them in the field. Three field schools were organized at Hurgati village and one at Delobari village. Eggplant farmers from both villages participated in the day-long field-based learning and practice sessions with great enthusiasm. The event was divided into four sessions and in each batches of 40- 45 farmers participated.

Pheromone trap is used for insect control

As a result of these sessions, farmers gained understanding of the crop growth periods, the

need for irrigation, and were able to identify pests and diseases. They also learned about control measures, maturity index of eggplant crops, and harvesting methods. A higher number of farmers are now practicing IPM with a focus on biological control agents (pheromone trap) and minimal use of pesticides.

*Varietal Improvement of Existing Eggplant and Introduction New Seeds*

Eggplant farmers strongly oppose introduction of new varieties. They prefer to plant their own local varieties which they believe are suited to their condition and have higher demand in their local markets. Use of seeds from the left over crops each year for multiple years creates genetic erosion, resulting in susceptibility to pest and diseases as well as to low yields. PRICE worked jointly with its partner organization, PRIDE Agro- Enterprise, to improve local seeds by the selection process method and collected seeds for further multiplication and selection. The seeds would then be replaced for the eggplant farmers, eventually improving the local seeds and resulting in higher yields and less pest problems. The enterprise processed 1.45 kg of eggplant seeds from the two best performing local varieties, Red Eye-ret and White Eye-ret for further selection and multiplication.

Farmers are evaluating the new variety

Krishok Bandhu Karmashuchi, another PRICE partner, introduced a new variety of eggplant, recently released from the Bangladesh Agricultural Research Institute, Gazipur and one land races – "*Kushtia Chega"* collected from a seed dealer of Jessore. It was released on a trial basis among the farmers of Mohinikathi and Bijiatala of Jhikorgacha, Jessore. Farmers from this area have been in eggplant cultivation for a long time, but during the last few years fruit and shoot borer, root rot and other diseases have caused them heavy losses. Spraying of high doses of pesticides at close intervals had little or no affect on pest control. Cultivation of eggplant regularly without proper crop rotation, cultivating the same local variety year after year, and use of high doses of pesticides at regular intervals was responsible high crop losses. Finding no other alternative, farmers agreed to change the cropping pattern and try the new pest-resistant eggplant variety.

PRICE assisted the Enterprise to get 400 gms of the high-yielding variety of eggplant (BARI-10) seeds from Bangladesh Agricultural Research Institute and supplied these seeds to the farmers for seedling rising. Local land race, "*Khustia Chega*" has already been transplanted in the main field and showing promising performance. Farmers are waiting to get the harvest,

however, the variety is showing high resistance to diseases and pests and flowering has already been started.

*Collection of Wild Seeds for Eggplant Grafting*

Grafting cultivated eggplant on root rot-resistant wild plants is a proven technology, but farmers in Jhikorgacha, Jessore were not aware of it, despite root rot being one of the major diseases affecting eggplant and causing losses for the farmers. Farmers were trained on grafting techniques and were taught the importance of planting grafted plants. One of the main obstacles to introduce the technology, however, is lack of wild plant seeds. No local institutes have been able to supply wild plant seeds to help initiate this program until the local horticulture center of DAE agreed to supply seedlings. To introduce the technology, 50 gms of wild root rot-resistance eggplant seeds were collected by PRIDE Agro- Enterprise and during the next season grafting of seedlings will be demonstrated to further expand this methodology.

*Introducing New Technology for Higher Yield and Longer Crop Duration*

Farmers are selling their 2nd harvest in the market

Eggplant that is transplanted during and immediately after the winter season stops giving economic yield after May and the plants start dying. During June, the supply of eggplant in the market becomes scanty and the price shoots up. Farmers usually remove the plants from the field and the land remains vacant for long periods of time – generally until it is time for the next rice crop. During this time, the farmers are jobless and do not have sources of income. To assist the farmers, PRICE worked out a technical solution to rejuvenate the eggplant and extend the crop cycle. This solution was implemented through activities with PRIDE Agro-enterprise. Only one third of the contract farmers agreed to try out this and followed the technical advice given to the farmers.

PRICE introduced the farmers in Hurgati village to this new technology of rejuvenating existing plants. The rejuvenated plants gave new shots and triggered profuse flowering. Farmers were amazed to see the new crops. From middle of June farmers started getting a second crop from the existing field. Previously the return from the crops was nil from June onwards, but after rejuvenation farmers began harvesting an average of 500 kg of eggplant on every alternate day

from 0.33 hectares of land with a sale price of BDT.18- 19/ per kg compared to the average price of BDT 8-10 per kg during the main cropping season. The harvest continued for more than 25 days. This created extra income for the farmers and the practice is expected to be adopted by all the neighborhood farmers.

### C. MANGO

Demonstration on post harvest handling

Mango, considered the most delicious fruit of Bangladesh, is liked by all. It is one of main cash crops for the farmers of Chapainwabganj, Rajshahi, Meherpur and other parts of the country. PRICE has been working with five partner organizations: Kansat Mango Famers Cooperative Society Limited and Bonolota Mango Producer Cooperative Society Ltd in the North West region; Uttaran Agro Enterprise, Ankur; and Chesta Agro Enterprise in the Southern part of Bangladesh. Through these organizations, a total of 3,763 mango farmers received assistance in improving productivity by adoption of modern technology, better pest management practices, proper harvest and post-harvest handling technologies, and establishing market linkages.

In addition to training on modern production technology and pest management, mango farmers were given demonstrations on post-harvest handling, particularly focusing on latex removal, cleaning, cold and hot water treatment, drying, grading, and packing in plastic crates for distant market (instead of traditional bamboo baskets). Post harvest losses due to improper harvest, post-harvest handling and packaging usually is about 20% which often increases to 30% due to rotting in retail sales outlets. PRICE is working jointly with its partners on timely harvesting, adopting proper post-harvesting technology instead of harvesting immature fruits, and stopping the use of carbide for ripening, which is a health hazard.

PRICE has supported Kansat Mango Farmers Cooperative Society Limited for the last two years to increase productivity, adopt better post-harvest handling methods, and marketing the farmer's produces directly by opening outlets in Dhaka. At these outlets post-harvest handling loss is almost nil and no carbide has been used to ripen mango.

During this quarter, 500 farmers from Bonolota Mango Producer Cooperative Society Ltd of Chapainwabganj and 720 farmers from Kansat Mango Famers Cooperative Society Limited were given exclusive training on post-harvest handling. Both organizations are marketing the produces directly to Dhaka outlets and retail points. Through this effort, they organizations' members will get better prices for their carbide-free garden fresh mango and the consumers will get vitamin A rich, unadulterated mango. PRICE also supported Uttaran Agro enterprise to train 501 mango farmers from Talla, Satkhira, on mango orchard management.

Hot water treatment plant

*Supporting Mango Farmers in Proper Harvesting Techniques and Onward Processes*

Harvesting mango and the subsequent processes are important interventions which were never given due importance by the farmers, wholesalers, and retailers. This led to the rampant use of carbide and other chemical agents harmful to humans and to high post-harvest losses, ranging from 20-30%. To help mitigate this, PRICE supported Bonolota Mango Producer Cooperative Society Ltd of Chapainwabganj to train 500 mango farmers on harvesting and post-harvest handling operations.


Mango farmers training at Baliadanga

Each group of farmers at the three training courses learned about the maturity index, harvesting processes, latex removal, cleaning, cold and hot water treatment, drying, grading, and packing in plastic crates for distant market. Farmers were also given information about the varietal characteristics, and pests and diseases.

Field training for mango farmers at Kansat

PRICE and Kansat Mango Farmers Cooperative Society Limited (KMFCSL) organized a training for 720 farmers on harvesting and post-harvest handling. The training was held right before the mango harvest time so the farmers could remember what they learned and follow the right techniques of harvesting and post-harvest handling. The day-long training program included practical demonstrations of mango harvesting, latex removal, cleaning and cold water treatment. Resource persons from the Mango Research Institute and Department of Agriculture Extension conducted the training.

Chesta Agro Enterprise, a newly formed agro enterprise of Kotchandpur, Jhenaidasha organized training for 120 mango farmers on "Quality Harvest and Post-Harvest Handling of Mango." PRICE helped organize the training.

*Assisting an Enterprise to Train Farmers on Mango Orchard Management*

Satkhira is located in the southern end of Bangladesh and is a disaster prone area. Although the area is not suitable for growing horticultural crops commercially due to salinity and disasters, but Talla Upazilla of the district and Sadar Upazilla were both found to be suitable for growing mango. During the past few years several small-scale backyard mango orchards came into existence in these areas. Many homesteads have several mango trees, an important source of vitamin A for children and a cash crop for the small holders.

Unfortunately, these farmers do not have proper knowledge and skill in mango production and marketing is a big problem for small holders. PRICE is assisting one the local enterprise, Uttaran Agro Enterprise, to support small holder mango farmers in the area to learn modern production technology of mango as well as post-harvest handling.

During this quarter, Uttaran Agro Enterprise organized and completed training for 500 mango farmers on "Improved Mango Orchard Management and Contract Farming of Mango." Farmers benefitted greatly from the training as prior to it they had no information on mango orchard management. Interestingly, mango flowering starts a little early in Satkhira than the northern areas due to the hotter climate, and the farmers usually sell the mango prematurely. Early varieties of mango- Gopalbhog and Himsagar are generally cultivated here. A short-statured Lata Bombay variety is also cultivated in the Satkhira area. PRICE assisted Farmers were advised not to sell their mango prematurely, which was the major reason for carbide treatment. The quality of the fruit was good and the farmers will be able to get a good price if they sell the mature fruits after following better post-harvest handling practices. Farmers were provided technical advice and technical notes in Bangla which will help them in following the production and post-harvest technology.

*Supporting Associations to Build the Capacity of Farmer Groups*


Farmers meeting on group formation

Most of the mango farmers of Rajshahi and Chapainwabganj are not well organized, which is one major obstacle to provide services to them. As well, the farmers are unable to together to get good prices from their produces. PRICE supported the formation of two associations in the district involving thousands of farmers, but the associations will need to put in a lot of effort in order to be strong enough to provide services to all members and bring benefits to them. Although they are doing a good job, they need capacity building support. As a part of strengthening the

associations, PRICE is assisting Kansat Mango Farmers Cooperative Society Limited and Bonolota Mango Producer Cooperative Society Ltd. organize several small informal farmers groups comprising of 20-25 members. These group members will work together under the broader umbrella of the association and the association will have stronger linkages with its group members therefore being able to efficiently deliver services.

During the period, the PRICE supported the aforementioned organizations to create a group of 38 mango farmers and elect group leaders to strengthen and build their capacity. The groups members are now starting working collectively to solve their problems and technical assistance is being provided to them.

*Organizing a Carbide-Free Mango Fair in Dhaka*

Mr. Mark Visocky is inaugurating the fair

Kansat Mango Farmers Multipurpose Cooperative Society Limited launched sales of garden fresh, carbide-free mango in Dhaka city by opening a sales outlet at Niketan, Gulshan. The sales operation was inaugurated June 14, 2011 by Mr. Mark Visocky, Deputy Director, USAID. He thanked the association for taking initiative to bring garden fresh carbide-free mango to the consumers of the city, and also thanked PRICE for supporting mango farmers in improving post-harvest handling, discouraging the use of harmful chemicals, and creating linkages with high end markets. Mr. Jules, Lampell, PRICE Chief of Party, explained the project's interventions in the horticulture sector, particularly supporting mango farmers of Chapainwabganj in increasing productivity and minimizing post-harvest losses. The Association Chairman thanked USAID and PRICE for supporting them for the last two years.

The purpose of the fair was to integrate trained mango growers with the high end consumers market and to increase the consumers' access to garden fresh, carbide-free mango. In addition, the fair also increased consumers' awareness about the use of this harmful ripening agent and supported the development of a traceable supply chain of quality mango. Carbides are used in key industrial applications and this chemical in mangoes can cause great harm, especially to children and women. The Carbide-Free Mango Fair will continue until the end of the season. The sales outlet has thus far received a huge positive response from the consumers and the

Mr. Jules Lampell , COP PRICE is delivering his speech in the inauguration of the fair.

association is getting good prices for their garden fresh mango.

## D. CROSS CUTTING ISSUES

## ORGANIC COMPOST

*Supporting Sustainable Vegetable Crop Production*

PRICE is assisting Grameen Krishok Shahyak Sangstha Enterprise (GKSSE), a small compost making company in Bogra to produce and promote organic compost in order to address soil health, sustainable production, and productivity of vegetable farmers. GKSSE organized a day-long training for 105 small vegetable farmers on the use and application of Tricho and vermi compost. The trainings were held in Telehara Madrasha; Bogra Sadar; Fulbari, Sherpur; and Khamarkandi, Sherpur, Bogra.

PRICE also supported Riya Fertilizer, another compost making company in Sirajganj, to organize day- long farmer training on the use and application of compost and other organic based fertilizer for sustainable production. The training, held in Gazipu, Kishoregonj, and Siragonj also focused on soil health and cost effective production technology. Three hundred small vegetable farmers participated in the training events.

Participants learned the importance of the use of compost and organic produce, including Tricho liquid, which helps in pest protection and improves plant health.

*Establishing Demonstration Plots to Promote and Showcase Compost Performance*

Grameen Krishok Shahyak Sangstha Enterprise established 12 small results demonstration plots using organic fertilizer with eggplant and gourds in different locations of Bogra. Similarly, Ryia Fertilizer also established five demonstrations plots in different locations of Sirajganj to promote the use of compost and showcase the performance of compost in comparison to traditional farming. Each of the enterprises established the demonstrations in 0.10 acres of land with compost and sprayed Tricho-liquid as per the recommended doses and compared the plant growth and crop yield with the adjacent, non-treated crop plot. In all cases, the crop yield increased by 15-30% in comparison to crops without the compost. Neighboring farmers were invited to see the performance.

*Developing and Strengthening Marketing Networks for Tricho- Vermi Compost*

Before working with PRICE, Riya Fertilizer, Sirajgonj had no marketing network and their production capacity was insignificant. PRICE supported the company to establish marketing networks in 10 new places: Bogra, Natore, Pabna, Josore, Barisal, Vola, Chuadanga, Gazipur, Kishoregonj, and Mymensingh. The company now has 13 dealers and 40 retailers. Through this marketing network revenue of the company increased their sales from BDT 332,000 to BDT 1,163,320 during the same reporting quarter over the previous year.

Grameen Krishok Shahyak Sangstha Enterprise, another PRICE supported partner, has also reorganized and strengthened its marketing network. It has divided its area of operation into 14 territories to serve 126 retailers, covering 79 markets in Bogra. During this reporting period GKSSE sold 88.6 MT of organic fertilizer and 1,025 liters of Tricho, worth BDT. 1.84 million. By strengthening the marketing network, both the companies were able to reach more small holders and contribute to sustainable crop production.

## E. QUANTITATIVE RESULTS

Horticulture sector partners increased their sales by USD 2.3 million in this quarter. Ferdous Biotech and GUKED were highest in increasing sales. 717 jobs were created by the partners, GUKED, Pride Agro Enterprise farmers and Krishok Bandhu Karmoshuchi farmers helped to increase the jobs most. USD 16.6 thousand of new investment was created during the quarter.

**Results in Horticulture during Apr-Jun 2011**

| | |
|---|---|
| *Sales increased* | $2.3 million |
| *New jobs* | 717 |
| *Investment increased* | $16.6 thousand |
| *Farmers trained in technology* | 1,896 |
| *Farmers trained in management* | 930 |

## PARTNER-WISE RESULTS IN HORTICULTURE:

| Region | Partner | Sales Increased (USD) | | | No. Total Jobs Created* | | | Investment Increased (USD) |
|---|---|---|---|---|---|---|---|---|
| | | Domestic | Export | Total | Male | Female | Total | |
| Bogra-Rajshahi | **GUKED-1** | 163,849 | 39,881 | **203,730** | 51 | - | **51** | **-** |
| | **GUKED-2** | 97,210 | - | **97,210** | 49 | - | **49** | **-** |
| | **GKSSE** | 21,194 | - | **21,194** | (7) | 2 | **(5)** | **347** |
| | **Murail Rural Development Multipurpose Cooperative Society Ltd** | 33,049 | - | **33,049** | 6 | (0) | **6** | **-** |
| | **Riya Fertilizer** | 11,543 | - | **11,543** | 3 | 1 | **4** | **1,522** |
| | **Ferdous Biotech Ltd.** | - | 474,045 | **474,045** | 6 | 8 | **14** | **-** |
| | **Bombay Sweets & Co Ltd** | 8,444 | - | **8,444** | 2 | - | **2** | **-** |
| | **Sajeeb Seeds** | 11,975 | - | **11,975** | (2) | 3 | **1** | **-** |
| Mango | **Kansat Mango Farmers' Association- Mango Stands in Dhaka** | 50,877 | - | **50,877** | 8 | - | **8** | **-** |
| | **Bonolota Baliadanga Mohonpur Mango Farmer Shamitee- Mango Stands in Dhaka** | 15,204 | - | **15,204** | 2 | - | **2** | **435** |
| Jessore-Khulna | **Konika Seed Company Ltd** | 1,338 | - | **1,338** | 1 | 0 | **2** | **165** |
| | **Padma Seeds** | 1,456 | - | **1,456** | (0) | 0 | **0** | **-** |
| | **Organix** | 55,194 | - | **55,194** | 3 | 1 | **4** | **-** |
| | **Lal Teer Seed** | 154,167 | - | **154,167** | 3 | (5) | **(2)** | **-** |
| | **EFADF Agro Business** | 104,725 | - | **104,725** | 14 | 2 | **15** | **-** |
| | **Muktir Alo Agro Business** | 4,255 | - | **4,255** | 0 | 0 | **1** | **-** |
| | **PRIDE Agro Enterprise** | 139,337 | - | **139,337** | 27 | 13 | **40** | **512** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Krishak Bandhu Karmoshuchi** | 39,306 | - | **39,306** | 0 | - | **0** | **-** |
| | **Golden Seed Pte Ltd** | - | - | **-** | - | - | **-** | **-** |
| Farmers trained by partners | **GUKED-1 Farmers** | 398,167 | - | **398,167** | 22 | 16 | **38** | **-** |
| | **GKSSE Farmers** | 147,710 | - | **147,710** | 127 | (6) | **120** | **1,591** |
| | **PRIDE Agro Enterprise - Farmers** | 131,659 | - | **131,659** | 123 | 45 | **168** | **8,931** |
| | **Krishak Bandhu Karmoshuchi -Farmers** | 168,004 | - | **168,004** | 150 | 39 | **189** | **1,264** |
| | **Golden Seed Pte Ltd - Farmers** | 2,787 | - | **2,787** | 3 | 3 | **6** | **111** |
| | **Uttaran Agro Enterprise - Farmers** | 48,058 | - | **48,058** | (4) | 4 | **0** | **1,758** |
| | ***Total*** | **1,809,506** | **513,926** | **2,323,432** | **591** | **126** | **717** | **16,635** |

* Direct job information is complemented using a statistical model to estimate associated job creation across the value chain.

**Source of data: Partner interviews for enterprises. In the case of farmer groups, small sample surveys for quarterly performance and statistical sample surveys for annual performance.**

## AQUACULTURE

The aquaculture sector is main supplier of animal protein consumed in the country, and expected to register a record earnings of roughly USD 635 million through the export of shrimp and fish during July 2010 to June 2011 fiscal year. The domestic market of fish is expanding due to population increase and boost in income of the masses, both in rural and urban areas. Fish is inseparable item in Bangladesh's food and also crucial to food security. The sector provides self-employments and opportunistic jobs besides helping to alleviate poverty by helping increased family income. Fish and shrimp two major components of aquaculture in the country and important in two points, over 98% of farmed fish are consumed locally and in contrast almost 95% of farmed shrimps are exported. Nonetheless, both fish and shrimp have great potential for growth.

Though land based aquaculture has flourished throughout the country, but degree of intensification towards vertical production increase has not yet homogenized country or region-wide, instead a few commercial farms produces as high as over 80 ton/ha of biomass whereas national average is below 4.0 ton/ha. Judicious uses of seed, feed and fertilizers together with adequate and responsible farming management under good aquaculture (GAP) practices can help Bangladesh reach to a level of high productivity in fish and shrimp farming.

A high yielding pond

A low yielding pond

In contrast to fish farming where national average is around 4.0 ton/ha, shrimp yield in Bangladesh is one of the lowest in the world due to mostly traditional form of farming. Among shrimp, freshwater prawn usually farmed with non-carnivore carp species and combined biomass production of prawn and fish is modest compared to brackish water shrimp, where companion brackish water non-carnivore fish like mullets suited with shrimp in polyculture has not yet succeeded for mass seed production in hatcheries. The absence of suitable non-carnivore companion fish for polyculture with shrimp and traditional methods of farming leads low

biomass yield from shrimp farming. The country attained self-sufficiency in seed production of fresh water fish and brackish water shrimp but lags behind in fresh water prawn and brackish water fish seed production through hatcheries.

PRICE is working together with its partners to address constraints hampering increased productivity by promoting eco-friendly crop-rotational and improved aquaculture practices coupled with encouragement to use quality grade inputs to sustain higher stocking densities and maximizing biomass production from a given water body based on farming practices pursued without increasing disease and mortality rates. The reporting period (April-June) is the peak session for rain-fed aquaculture when fish and fresh water prawn are able to breed and hatcheries make the most of the spawn productions and farmers gear-up stocking. So, importance was given to provide improved farming based training programs as much as possible to new farmers by short term hired consultants and follow-up programs through in-house counseling by PRICE staffs, group organizers and group association leaders. The project also continued facilitating access to better inputs and finance, and assisted the fish and shrimp farmers and other supply and value chain actors to access to institutional finance through organizing two workshops in Jessore and Bogra areas. As part of inter-partner cooperation and dissimilation of information, success and new farming knowledge one farmer group from Jessore visited Bogra and another group from Bogra visited Mymensingh area.

PRICE partners at GULFAIR


An in-country study trip to Mymensingh

During last few months some reports in international electronic media focused a number of unacceptable practices by some supply and value chain actors mainly in shrimp that raised questions among buyers of Bangladesh products. To mitigate the problems and to create mass awareness at grass-root levels, PRICE discussed and negotiated with Bangladesh Frozen Foods Exporters Association (BFFEA) for a collaborative program and jointly with DoF and BFFEA signed a MoU on cost-sharing basis. Besides, a follow-up discussion on export potential of fish and shrimp in new markets based on experiences gained through participating PRICE and its partners to Dubai Gulfair, and Katalyst and its partner organization's to Brussels foods fair were held during this quarter and inter-developmental organization dialogue between PRICE, Katalyst, Winrock and Innovation on the matter was initiated.

To focus importance on agribusiness PRICE COP and aquaculture team leader was invited to a seminar by a reputed private university in Dhaka as special to talk on PRICE initiatives to increase competitiveness among agro-based enterprises to alleviate poverty and key-note speaker on aquaculture based food security, respectively. The seminar was attended by a good numbers of academicians, researchers, graduate and under-graduate students on April 18, 2011 at Eastern University, Dhanmondi, Dhaka.


COP of PRICE at a Seminar

COP of PRICE at a Seminar

The mounting figure of fish and shrimp farmers and trainers trained on improved farming and farming supervision technology reached to 39,596 (5,970 during April-June quarter). At the end of June 2011 total farmers trained on improved management reached 21,165 (5,920 in the quarter) and training of workers reached 4,979 (500 in this quarter).

Aquaculture sector partners gained an increased sale of USD 17.7 million in this quarter.

Major portion of this increased sales in this period came through Bhaluka Association, Trishal Fish Farmers Somity and Sherpur Motshya Chashi Somity in Fish subsector and the GHERS initiative and some processing firms in Shrimp subsector.

Sales increased by USD 13.3 million in this quarter in Fish subsector. Bhaluka Fish Association's farmers increased their sales by USD 4.9 million, Trishal Fish Farmers Somity farmers increased their sales by USD 2.6 million, Sherpur Motshya Chashi Somity farmers increased sales by USD 1.4 million in this quarter. Tarakanda Association, TMUS, Kahaloo Fish Farmers' Association, DMBBS, SSURDA and Kahaloo Motshya Pona Utpadonkari Somobay Somity also contributed to increase sales in the subsector.

In Shrimp subsector, sales increased by USD 4.4 million in Apr-Jun '11 quarter. Organic Shrimp Export, Jalalabad and Jahanabad processing plants led to an increased sales of USD 4.8 million.

GHERS helped to increase sales by USD 3.4 million through the depots who work with more than 22 thousand farmers now.

In job creation, Aquaculture sector partners achieved 1,242 new jobs in this quarter. Pori Motshya Hatchery, Kahaloo Fish Association, GHERS initiative and some shrimp processing plants contributed most to create the jobs.

**PRICE Achievements in Aquaculture during Apr-Jun 2011**

| | |
|---|---|
| *Sales increased* | $17.7 million |
| *New jobs* | 1,242 |
| *Investment increased* | $796 thousand |
| *Farmers trained in technology* | 16,035 |
| *Farmers trained in management* | 5,270 |
| *Training for workforce development* | 500 |

USD 796 thousand of investment was generated in Aquaculture sector during the period. Farmers of Bhaluka Fish Assocaition, Kahaloo Fish Association, SSURDA and Adamdighi Somity contributed to increase investment in Fish subsector. GHERS initiative mainly contributed to increase investment in Shrimp subsector.

## A. FISH

Throughout the country with special emphasis to Mymensingh, Bogra, Jessore and Cox's Bazar regions PRICE collaborated with a total of 45 partners during April-June, 2011 period: 18 diverse fish farming associations, 9 farming groups within NGOs, 12 hatchery cum farming groups, 2 community based farming and management groups, one seed traders association, one input seller company, one processing factory, and one association for dry fish and two feed millers. The project assisted strengthening linkages with different supply chain and value chain actors for their mutual benefits; farmers were linked to quality seed-producing hatcheries, nurseries and feed miller through input sellers; nurseries to hatcheries, and hatcheries to good broods sources. The project also facilitated trainings for household and commercial farmers on farm management for different fish species under diverse production technologies, from pond preparation to harvesting and marketing. PRICE has provided technical assistance to 10,070 farmers during this quarter, for a total of approximately 30,333 fish farmers, including 10,085 women (4,198 this quarter) since the inception of the project. This quarter marks the beginning of yearly aquaculture to vast majority of rain-fed farming for micro, small and medium fish farmers who are not able to practice perennial farming for a reason or other, most improved farming and management related trainings were conducted simultaneously for farmers who received trainings in the reporting period. In this quarter, PRICE also arrange a few workforce training programs and altogether trained 500 workforce in this quarter, of which 69 are females and rest are male workforce.

*Early Harvest of Crops Farmed using Over-Wintering (OW) Seeds*

During the reported period a significant number of farmers beneficiaries of PRICE partners registered bumper crops early in 2011 using the OW seeds. The farmers belonging to Tarakanda Satata Matsya Somity (TSMS), Bhaluka Motsya-Chashi Samaboya-Somiti (BMCS), Muktagacha Fish-Farmers & Business Association (MFBA), and Trisal Fish Farmers-Business Somity (TFFS) in Mymensingh; Agriculture Advisory Society (AAS) in Natore; Mourail Matsya Chashi Samoby Somity (MMCSS), Kahaloo Matsya Chashi Samoby Somity (KMCSS) and Talora Ancholik Motsya-Chashi Samaboya-Somiti (TMCS) in Bogra harvested their crops during the reporting period or about to harvest by July 2011. All these farming groups practices perennial aquaculture and use both the over-wintered and conventional fish seeds. Beside these farming groups where the OW seeds are popular, some farmers in other group mostly practice rain-fed farming also raised, harvested and marketed some early crops using OW seeds.

Climbing perch with OW seeds, harvested in Early May

Pangas crop with OW seeds ready to harvest in Early May

Among the farmers/beneficiaries under association using the OW seeds other than above mentioned groups, Trinomool Manobik Unnayan Sangstha (TMUS) in Pabna, Phulpur Fish and Prawn Farmers' Association (PFPFA) and Muktagacha Fish-Farmers & Business Association (MFBA) in Mymensingh; Rakhaing Development Foundation (RDF) in Borguna; Sherpur Matsya-Chashi Samaboya-Somiti (SMCS), Alamdigi Khudra-Motsya Beboshahi-Somity (AMBS) and Society for Sustainable Development for the Rural & Urban Area (SSURD) in Bogra associated farmers also raised, harvested and marketed early crops during the April-June period. Most of the farmer beneficiaries produced marketable fish and reportedly received good market prices. Though traditional aquaculture seed production is generally done seasonally by hatcheries based on natural breeding cycles of fishes that is a biological phenomenon and can't be manipulated beyond certain period, but the OW manipulation to preserve seeds for later use is commercially viable for perennial farming and is able to ensure the year round fish seed supply. This is indeed a good sign that popularization of OW seeds got momentum through the intervention and activities of PRICE and its partners.

*Expanded Fish Seeds Production*

The reported period (April-June) is beginning of traditional seed production of local and exotic carps together with other popular farmed fish species in Bangladesh. During this quarter all 12 partner hatcheries of PRICE, four are specialized mono-sex tilapia hatcheries and the rest are general fish hatcheries produced relatively 5-15% of higher amount of spawns compared to corresponding identical period of 2010.
The four partner mono-sex hatcheries are located in Cox's Bazar; Allahwalla Hatchery & Farming Complex (AHFC), Niribilli Tilapia Hatchery (NTH**,**); Pabna, Chitralatha Aqua Park Ltd. (CAPL,) and Natore (North-Bengal Thai-Tech Tilapia Hatchery (NBTH). The carp and other fish hatcheries include (Nowapara Fisheries complex (NFC) hatchery, Pori Matsya Hatchery (PMH), Rupali Fish Hatchery (RFH), Ma Fatima Fish Hatchery (MFFH) and Shuvro Matsya Hatchery (SMH) in Jessore; Sambridhi Bhomuki Matshya O Gobeshona Kendra (SBMK) in Cox's Bazar; Bakolia Matsya Hatchery (BMH) in Chittagong and South Bay hatchery (SBH) in Khulna.

A mono-sex tilapia hatchery in operation

A Carp hatchery in operation

*Commercial Nursing of Farmed Fish*

The expanded fish production in the country is partly due to stocking of pre-nursed fish to grow-out farming that ensures better survival, responsible farming management and cut down total grow-out period of table fish production.

PRICE facilitated trainings, counseling and hands-on teaching to hatchery operators for initial nursing of spawn, nursery operators and fish seed traders to nurse spawn to fry and fingerling stages to facilitate before marketing and stocking by farmers in grow-outs. PRICE partner Digherkanda Mastopona Beboshahi-Kallan Bohumukhi Somabaya Somity (DMBBS) in Mymensingh and Kahaloo Mosta-pona Utpadonkari Samaboya-Somiti (KMPUSS) in Bogra commercially nurse fish in mass sale and trade those to organized and individual farmers The groups also provides embedded services to farmers and arranged supply seeds to farm gates on request with own or hired vehicles. During this quarter both the DMBBS and KMPUSS

conducted nursing of 16-20 species of farmed fish and sold those to old and new buyers throughout the country.

Commercial nursing ponds

Nursed fingerlings

*Expanded aquaculture turned fishing village into fish farming village*

Fishing long had been a rural economic activity steadily declining in recent decades due to over-exploitation, destruction of natural habitat and biodiversity. Fortunately, displaced fisher flock and unemployed rural youths are encouraged to pursue fish farming as self-employment opportunities. PRICE working with organized fish farming groups in many parts of the country and some fishing villages near rivers in greater Mymensingh has turned into aquaculture /fish

A fish farming village

Community based farmers gear-up for harvest

farming villages in recent years. PRICE facilitated trainings, counseling and hands-on teaching to farming associations in Mymensingh, Jamalpur, Tangail, Jessore, Khulna, Bogra, Pabna and Cox's Bazar areas. These trainings focused on improved farming, use of quality grade inputs, group collection of inputs and group marketing. The concentration of fish farming activities in some localized areas has also created diverse jobs never seen before like fish harvester and transporter from farm to trucks etc.

Besides, PRICE is also working with endangered fishing community to practice community based management of semi-closed and derelict water bodies to convert into semi-controlled production unit to produced fishes almost similar to those of natural fish. In community based farming no supplemental feeds are used, instead measures are taken to clean the huge water body out of aquatic vegetation to facilitate rapid photosynthesis, stocking of pre-nursed non-carnivore fish species, eradication of carnivore species and protection of fishes from illegal poaching. PRICE assisted two community based groups to procure government owned water bodies, facilitated training on semi-closed water management and judicious nursing before stocking. Two of the community based farming associations are Nokla Motsojibi Somity (NMS) and Bamunji Beel Motsojibi Somity (BBMS)

*New types of employment opportunities in farming areas*

It is known that aquaculture creates multifarious economic activities that also create jobs in forward and backward linkages. However, some peculiar type of employments is currently observed in high density farming areas also during odd times. Most of the PRICE assisted high density farming associations in Mymensingh and Bogra regions produces huge amount of biomass and when these crops are harvested live fish collections, weighing, transport and marketing has become new businesses. The fishes are harvested at evening; a group of coolies transport live fishes to weighing sites at farm gates, transport those to trucks and fill plastic drums with water. A significant number of villagers earn their livelihoods through these types of odd jobs never seen before.

Weighing climbing perch at pond

Weighing pangas

Truck loaded with live fish

*Biodiversity enhancement in farming areas*

The expansion of aquaculture like high density conventional nursing, over-wintering nursing, grow-out farming, frequent harvesting and drain-out of pond water produces many weak, discarded, dead fishes and feeds in the farming and adjacent sites. The presence of many discarded fishes and feeds lures fish eating birds like kingfishers, crows, kites, eagles and other

fish eating species in fish farming sites. This is a positive development as numbers of fish eating birds in rural areas of Bangladesh are significantly declining in recent decades due to destruction of their habitat and source of foods. During recent visits by a joint USAID and PRICE team to Tarakanda areas in Mymensingh it was observed high density farming in clusters has lured many species of fish eating birds. The birds were seen to fly over the ponds for weak and dead fishes either floating of sluggishly swimming on surface water and birds were preying on them.

Fish eating birds at farming sites

Domesticated birds also roam fish pond

*Increased Capacity of Small Hatcheries to Produce Diverse Fish seeds*

In some fish farming association in Mymensingh areas like the MFBA and the TSMS also includes small hatcheries with brood rearing and grow-out facilities as active members of the associations. These small hatcheries with experiences of nursing, grow-out farming and brood rising has developed expertise to produce popular farmed fish seeds for regional or local markets based on farmers needs. These small hatcheries in Phulpur and Muktagacha areas are producing local carps, climbing perch and stinging catfish seeds for their own needs and for adjacent farmers of the regions. It was reported that most farmers of the MFBA and the TSMS collect their needed fish seeds from member hatcheries of their associations. When asked why they prefer local seeds some lead farmers of those associations replied that it ensures proper feed back from farmers and accountability of the hatcheries involved.

Newly hatched fish fry on tray in a hatchery

Fish fry about to release to nursery pond

*Renting Gonads for Commercial Seed Production*

Same small fish species like stinging catfish and climbing perch could be farmed with 100% supplementary commercial feeds under high density. The maturity of these species attains within a year or a session. The farming stocks when fed with supplemental feeds at satiation point throughout the farming cycles grow with good health under good nourishment. The ideal farming conditions also helps to develop gonads in grow-out commercial farming. Some farmers at TSMS stock fry and fingerlings from diverse source an raise those to maturity under high density farming with supplemental feeds and observe their gonad development and select healthy male and females of same species of different origin and rent those to local hatcheries. They hatcheries assist to release ova and semen artificially and fertilize those for farmers and keep the spent broods as cost for their services and sell those to market as food fish.

Farmed climbing perch to be used as brood

Selected farmed stinging catfish can be

*Promoting Better Farming Practices*

During April-June 2011, recruitment of most the technical consultants and group organizers were completed. During the reported period PRICE and the partner organizations arranged a total of 102 trainings for 5,050 fish-farmers (including 1,694 female farmers) on improved farming techniques. These farmers were a part of small, medium and large commercial farming groups under associations, as well as from marginal and micro farming families associated with NGOs. The small farming groups received trainings basically on integrated farming focused towards family nutrition and food security. PRICE together with its partners assisted to carry out improved farming training programs for farmers of different categories; the largest group amassed at GIMCS (Global Islamic Multipurpose Cooperative Society) in numbers where 16 training programs included 442 females integrated fish & shrimp farmers among 800 trained. SSURD was second (fifteen trainings, with 750 mostly male and 37 women members) at Shariakandi in Bogra, followed by DEESHA Samaj Kallyan Sangstha (DSKS) with all women 500 members; Jano Seba Kendra (JSK) arranged 9 training programs in Feni and Rajbari areas for 450 farmers where 268 participants were females. Besides, other significant numbers of training programs arranged by Rakhaing Development Foundation (RDF, 7 trainings, 350

trainees including 119 females with significant number of ethnic minority people) in Patuakhali, Borguna and Bandarbon; Din Bijoy Enterprise (DBE, 7 trainings, 350 trainees including 214 females) in Bagerhat and Agricultural advisory Society (AAS, six trainings with 300 all male participants) in Natore. Other associations jointly facilitated improved farming trainings includes Sumridhi Matsya Unnayan O Gobeshona Kendra (SBMUGK, 200 farmers including 56 women); North Bengal Thai Tech Tilapia Hatchery (NTTH,150 all male trainees); Kahaloo Matsya Pona Utpadonkari shomoby Shamitee (KMPUS, 150 all males); Trinomool Manobik Unnayan Sangstha (TMUS, 150 all male); Polli Bodhu Kallyan Sangstha (PBKS, 100 including 20 women) and Patchpir Bazar Matsya Chashi Shomoby Samity (PMCS, 100 all male).

### *Promoting Cage Farming as a Commercial and Holistic Approaches*

During last quarter (January-March, 2011) MOU was signed between PRICE and Bangladesh Cage Farming-owner's Association and formal training on improved cage farming has initiated in Chandpur and Lakshmipur areas during this reported period. The cage farming is promoted among new entrepreneurs on commercial as well as holistic approaches where floating cages offers opportunistic shelters as sanctuary to wild fish and seep away feeds from floating cages provides nutrition to fish and other aquatic organism and assist to protects biodiversity in rivers. The fish congregating and roaming around the floating cages remains off-limit of nets of commercial fishermen.

### *Promoting Entrepreneurs in Fish Based Value added Products Development*

As part of providing improved technique to farmers and manufacturers, PRICE assisted Nazirertek Fish-dryers Multipurpose Cooperative Somity (NFMC) to train 300 dry fish manufacturers on hygienic dry fish production and packaging and 50 fish suppliers in Golden Harvest Sea Food and Fish Processing Limited (GHFPL) on cool chain management and responsible transportations.

Male female hands on training program

Class room based training

*Improving Management Skills of Farmers*

During April-June the reporting period, PRICE and its diverse partners arranged a total of 101 management related trainings. Through these trainings, the project helped train a total of 5,020 fish-farmers, nursery operators, fish traders, dry fish manufacturers on improved farm management, including group procurement of inputs and raw materials necessary for farming and dry fish manufacturing, group marketing of the produces, cost benefit analyses, and documentation. The 5,020 trained value chain actors, 1,618 of whom were females and 3,402 were males. The IMCS led the list with 800 trained on management with 442 females , followed by SSURD with 750 and DSKS with 500, JSK - 450, GIMCS - 450, RDF and DBE each with 350, NFMC – 300, AAS -300, KMCS – 250, NTTH – 150, PMCS -100, KNPUS – 100, PBKS -50, TMUS – 150 and MMCS -120.

Training for Dry Fish manufacturers

Marine discards are main source of dry fish

*Women involvement in household based aquaculture is increasing*

During this quarter as mentioned earlier a total of 1,694 household based women were trained on improved farming training programs. DEESA, an NGO organized the highest women group training all 500 women in Jessore, other organizations like Global Islamic group in Bagerhat, Sumridhi in Cox's Bazar, RDF in Borguna, Patuakhali and Bandarbon, JSK in Feni and Rajbari and Pollibodu at Gaibandha has trained significant number of women on household based aquaculture with marginal or small physical resources including household ponds to raise fish under an integrated and very often whole family approaches. These small women led entrepreneurs are not commercial farmers but mainly produces fish and allied other crops on pond embankments for food security, family nutrition and income. The excess they sold to village markets.

Class room based fish farming training

Hands on training at farm site

*In-Country Study Trips*

During the reported period (April-June, 2011), PRICE facilitated 2 in-country study trips among PRICE cross-partner in-country visits from relatively low production sites to relatively better production areas to observe their farming techniques. The visiting groups from Bogra to Mymensingh and Jessore to Bogra showed keen interest in visiting relatively high density farming that leads to vertical production rises where they have reached very successful production levels of pangas, mono-sex tilapia, climbing perch and stinging catfish.

A group of fish farmers from Jessore region those who visited Bogra areas explained their experiences of the in-country study trip to fellow fish farmers upon return to Jessore. The visiting members explained that it was for the first time in their lives that they have seen so much fish is produced in a pond using artificial/supplemental feeds. They were specially impressed by efficacy of floating feeds and three members of the visiting teams' members initiated using floating feeds to farm mono-sex tilapia. They mentioned that though Jessore area is known as pioneer of fish seed production but high density farming has flourished in Bogra and reportedly in Mymensingh regions. The visiting team members have shown keen interest to visit Mymensingh next time where farmers have reached to a greater degree of excellence in vertical production techniques.

*Advocacy for uses of quality grade Improved Dried Pellet Feeds for Fish*

Through the market study on two important farmed species, Pangas and tilapia it was revealed that use of commercial supplemental feeds semi-intensive high-density farming to produce higher amount of biomass from a unit area was materialized. Based on the information on use of supplemental feeds for fish were disseminated to all fish farming groups through improved farming trainings to farmers who are ready to invest for high density farming and will spend more running capital for better yield. Quality grade dry sinking and floating pellet ensures less water pollution and high productivity of fish. During the reporting period, the project initiated work with an additional feed mill in Mymensingh, SMS Feeds Limited (SMSFL), which specializes in fish feed formulation and marketing. PRICE partnered with the SMSFL and made

arrangements to train their dealers and agents so that they will be able to provide embedded services to fish farmers on judicious uses of supplemental feeds.

An automatic feed mill

Fish feed weighing and packaging

*Strengthening Organization Capacity*

PRICE in aquaculture sector both in fish and shrimp signed MoU with 71 partners and currently continued working with 65 partners throughout the country. Majority of aquaculture partners are association or cooperative with lose bondages. It is assumed that if the organizational capability of the organization could be strengthened through better member services, commitments of members towards their rights and obligations then sustainability of the organization may be

Dry Fish association may be strengthened

Fish seed traders groups may be sustainable

ensured when PRICE ceased to exist. To strengthen some organizations to a certain extent an initiative was undertaken and experimentally 5 associations/cooperative are preliminarily selected based on their current state of organizational functions to work with them in future on diverse ways to strengthening their capacity. One dry fish manufacturing with 400 strong memberships, fish seed traders association with over 70 memberships and three farming

associations are selected, their business sites were visited and in depth discussion was held with association leaders and lead members during the reported period.

*Workshops on Access to Institutional finance*

During April-June period two accesses to finance workshops were arranged at Jessore and Bogra. Both the workshops were for aquaculture partner based SMEs mainly in fish sub-sector located in Bogra-Pabna-Rajshahi-Rangpur regions and the one arranged in Jessore incorporated both Fish and shrimp based SMEs. The workshops in Bogra and Jessore were arranged at hotels in afternoon to facilitate better participation of bank officials who are usually busy during day time. In the workshop at Jessore there were 56 participants, 16 from 9 banks and a non-bank financial institution, and in Bogra there were 51 participants; 13 officials from 13 banks including representative from Bangladesh bank, commercial banks in public and private sectors. Both bank representatives and aquaculture business personal actively took part in discussions. Bank representatives openly discussed how fish and shrimp farmers and other stakeholders in the area could get access to institutional credits and their limitations to assist in these very important rural economic activities. The fish farmers also interested to learn procedures on how to procure institutional credit for their business. PRICE officials requested the aquaculture participants to establish rapport with banking officials present in the workshop for better understanding of credit issues. In response to request by fish farmers to widen their cooperation in lending credits to fish farming, banking officials said that they have no objections to provide credits to prospective fish farmers or other enterprises engaged in aquaculture business following rules and regulations enacted by GoB or Bangladesh Bank. The open discussion between the value chain actors in aquaculture and financial institutions appeared highly successful as both parties satisfied through deliberations. The news of the workshops was aired by electronic media and covered by print media.


COURTESY: **PRICE**

**USAID-PRICE workshop on access to finance for aquaculture partner based SMEs, mainly in fish sub-sector in Bogra-Pabna and Rajshahi-Rangpur regions, held at Naz Garden Hotel in Bogra town yesterday. As many as 51 bank officials and aquaculture partners participated in the workshop.**

Workshop at Bogra


Workshop at Jessore

*Access to Micro Finance & Micro-credit*

Among the partners in fish sub-sectors there are micro and small farmers' mostly household levels and are usually unable to receive institutional credits for a reason or other. Physical resources in aquaculture are mainly ponds, and closed water bodies that are sometimes leased by farmers, multi-ownerships by relatives or neighbors. Lease document and/or multi-ownerships do not allow getting bank loans, PRICE continued to assist these farmers to obtain loans from micro-credit sources, including three NGOs: SSS, Jano Seba Kendra (JSK) and TMUS. These loans ranged from BDT 3,000 to 35,000. Besides, repayment schedule from weekly basis to seasonal basis were also negotiated for fish farmers, so that resource poor farming families may pay the debt after harvesting fish crops.

**QUANTITATIVE RESULTS**

PRICE has provided technical assistance to 10,070 farmers during this quarter, resulting in a cumulative total of approximately 30,333 fish farmers, including 10,085 women (4,198 this quarter). Besides, 500 workforces were also trained. Partners in fish subsector have increased their sales by $13.3 million in this quarter. More than $347,863 was invested in the period.

**Achievements in Fish during Apr-Jun 2011**

| | |
|---|---|
| *Sales increased* | $13.3 million |
| *New jobs* | (3,563) |
| *Investment increased* | $347,863 |
| *Farmers trained in technology* | 5,150 |
| *Farmers trained in management* | 5,170 |
| *Training for workforce development* | 500 |

**Partner-Wise Results in Fish:**

| Region | Partner | Sales Increased (USD) | | | No. Total Jobs Created* | | | Investment Increased (USD) |
|---|---|---|---|---|---|---|---|---|
| | | Domestic | Export | Total | Male | Female | Total | |
| Mymensingh-Jamalpur | **DMBBS** | 619,549 | 0 | **619,549** | 31 | 0 | **31** | **7,349** |
| | **PFPFA** | 304,450 | 0 | **304,450** | 59 | 0 | **59** | **12,558** |
| | **TFFS-1** | 1,594,114 | 0 | **1,594,114** | 98 | (0) | **98** | **1,111** |
| | **TFFS-2** | 1,060,755 | 0 | **1,060,755** | 114 | 0 | **114** | **1,819** |
| | **Nokla Motsojibi Somity** | 59,531 | 0 | **59,531** | 29 | 3 | **32** | **0** |
| | **Bamunji Beel Motsojibi Somity** | 24,906 | 0 | **24,906** | 11 | 1 | **12** | **2,222** |
| | **Muktagacha Fish Farmers' Association** | (153,800) | 0 | **(153,800)** | 77 | 0 | **77** | **5,352** |
| | **Unnayan Sangha** | 22,345 | 0 | **22,345** | (5) | 0 | **(5)** | **0** |
| | **Tarakanda Association** | 758,143 | 0 | **758,143** | 30 | 0 | **30** | **0** |
| | **Bhaluka Motso Chasi Somoboy Somity** | 4,919,622 | 0 | **4,919,622** | (1,324) | 0 | **(1,324)** | **40,333** |
| Bogra-Rajshahi | **TMUS-1** | 389,004 | 0 | **389,004** | 111 | (1) | **110** | **8,643** |
| | **TMUS-2** | 849,139 | 0 | **849,139** | (113) | 0 | **(113)** | **16,693** |
| | **Chitralatha Aqua Park ltd.** | 10,415 | 0 | **10,415** | 1 | 0 | **1** | **417** |
| | **Kahaloo Matshya Chashi Samoby Samity-1** | 804,507 | 0 | **804,507** | 390 | 7 | **397** | **42,866** |
| | **Kahaloo Matshya Chashi Samoby Samity-2** | 498,572 | 0 | **498,572** | 72 | (0) | **72** | **7,005** |
| | **Pachpir Bazar Matsya Chashi Samoby Samity-1** | 140,761 | 0 | **140,761** | 36 | 0 | **36** | **1,000** |
| | **Murail Matsya Chashi Samoby Samity-1** | 442,936 | 0 | **442,936** | 65 | 0 | **65** | **4,782** |
| | **Murail Matsya Chashi** | (942,058) | 0 | **(942,058)** | (533) | (1) | **(534)** | **2,106** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Samoby Samity-2** | | | | | | | |
| | **Society For Sustainable Development for The Rural and Urban Area (SSURDA)** | 498,372 | 0 | **498,372** | (1,535) | 779 | **(756)** | **43,800** |
| | **Talora Ancholic Motsya Chashi Samoby Somity** | 233,177 | 0 | **233,177** | (121) | 4 | **(118)** | **6,378** |
| | **Sherpur Matsa Chasi Somoboya Somity** | 1,407,259 | 0 | **1,407,259** | 100 | 2 | **102** | **6,604** |
| | **Kahaloo Matshya Pona Utpadankari Somoby Somity** | 476,228 | 0 | **476,228** | 60 | 1 | **61** | **9,444** |
| | **Adamdhighi Khudra Motso Beboshahi Somity** | 379,267 | 0 | **379,267** | 117 | 1 | **117** | **20,882** |
| | **North Bengal Thaitech Tilapia Hatchery** | 5,123 | 0 | **5,123** | 0 | 0 | **0** | **0** |
| | **Agriculture Advisory Society (AAS)** | 198,577 | 0 | **198,577** | (7) | 0 | **(7)** | **5,529** |
| Barishal | **RDF-1** | 132,445 | 0 | **132,445** | 67 | 0 | **67** | **5,558** |
| | **RDF-2** | (101,392) | 0 | **(101,392)** | 110 | 0 | **110** | **8,093** |
| | **Barisal Aquaculture Development Society** | 24,857 | 0 | **24,857** | (8) | 0 | **(8)** | **3,986** |
| Comilla-Cox's Bazar | **SSS-1** | (41,950) | 0 | **(41,950)** | 61 | 0 | **61** | **6,153** |
| | **SSS-2** | 124,838 | 0 | **124,838** | 65 | (2) | **63** | **13,311** |
| | **Jonoseba Kendra-1** | 53,141 | 0 | **53,141** | 23 | 0 | **23** | **3,000** |
| | **Jonoseba Kendra-2** | 33,092 | 0 | **33,092** | 16 | 0 | **16** | **1,250** |
| | **Nazirertek Fish-dryers Multipirpose Cooerative Somity** | (2,372,519) | 0 | **(2,372,519)** | (810) | (1,716) | **(2,526)** | **0** |
| | **Allawalla Hatchery & Farming Complex** | 39,882 | 0 | **39,882** | 38 | 0 | **38** | **0** |
| | **Samridhi Bhomuki Matsya O Unnyan Gobeshona Kendro** | 4,064 | 0 | **4,064** | 1 | 0 | **1** | **278** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Jessore-Khulna | **Mulia Matshyajibi Samittee** | 20,372 | 0 | **20,372** | 3 | 0 | **3** | **4,036** |
| | **Gondhamari Motshygibi Samabaya Somiti** | 44,552 | 0 | **44,552** | 3 | 7 | **10** | **5,750** |
| | **South Bay (Pvt) Ltd.** | 16,500 | 0 | **16,500** | (1) | 0 | **(1)** | **0** |
| | **Nowapara Fisheries Complex** | (51,285) | 0 | **(51,285)** | (5) | (0) | **(5)** | **0** |
| | **Ma Fatema Fish Hatchery** | 16,111 | 0 | **16,111** | 8 | 0 | **8** | **0** |
| | **Pori Matshya Hatchery** | 50,000 | 0 | **50,000** | (3) | 0 | **(3)** | **2,750** |
| | **Rupali Fish Hatchery** | 9,298 | 0 | **9,298** | (3) | 0 | **(3)** | **0** |
| | **Shuvra Matshya Hatchery** | 33,333 | 0 | **33,333** | (26) | 0 | **(26)** | **972** |
| | **Razu Enterprise** | 19,597 | 0 | **19,597** | 0 | 0 | 0 | 0 |
| | **Mondal Fish** | 2,916 | 0 | **2,916** | 0 | 0 | 0 | 0 |
| | **Satata Fish** | 11,264 | 0 | **11,264** | 0 | 0 | 0 | 0 |
| Processor | **Golden Harvest Seafood and Fish Processing Ltd.** | - | 202,462 | **202,462** | 2 | 2 | **4** | **43,056** |
| Input seller | **Fishtech (BD) Limited** | 80,556 | - | 80,556 | - | - | - | 2,778 |
| | **Satkhira Feed Industries Ltd.** | 339,038 | | 339,038 | 47 | 0 | 47 | 0 |
| Farmers trained by Hatcheries | **Chitralatha Aqua Park ltd.** | 51,814 | 0 | **51,814** | (0) | (1) | **(1)** | **455** |
| | **North Bengal Thaitech Tilapia Hatchery** | 4,732 | 0 | **4,732** | (35) | 0 | **(35)** | **4,482** |
| | **Allawalla Hatchery & Farming Complex** | 7,464 | 0 | **7,464** | 8 | 0 | **8** | **1,463** |
| | **Samridhi Bhomuki Matsya O Unnyan Gobeshona Kendro** | 9,995 | 0 | **9,995** | 15 | 0 | **15** | **281** |
| | **South Bay (Pvt) Ltd.** | (46,539) | 0 | **(46,539)** | (22) | 3 | **(20)** | **4,549** |
| | **Nowapara Fisheries Complex** | 121,846 | 0 | **121,846** | 85 | 0 | **85** | **4,722** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Ma Fatema Fish Hatchery** | (10,540) | 0 | **(10,540)** | 38 | (0) | **38** | **2,111** |
| | **Pori Matshya Hatchery** | 154,221 | 0 | **154,221** | 956 | (0) | **956** | **2,892** |
| | **Rupali Fish Hatchery** | 44,718 | 0 | **44,718** | 29 | (0) | **29** | **4,364** |
| | **Shuvra Matshya Hatchery** | 2,285 | 0 | **2,285** | 11 | (0) | **11** | **94** |
| | **Total** | **13,089,607** | **202,462** | **13,292,068** | **(2,649)** | **(914)** | **(3,563)** | **347,863** |

* Direct job information is complemented using a statistical model to estimate associated job creation across the value chain.

**Source of data: Partner interviews for enterprises. In the case of farmer groups, small sample surveys for quarterly performance and statistical sample surveys for annual performance.**

Notes: For job creation, some partners faced negative changes compared to the same quarter in baseline year which made the total performance of job creation in fish subsector negative. However, considering the agricultural seasons highly dependent on various uncontrollable issues like climate etc. and the reporting season consisting only a part of a whole aquaculture season, any comment on this negative performance is yet to be made. PRICE holds the same opinion for the negative change in sales for some partners.

## B. SHRIMP

The salt water black tiger shrimp popularly known as *bagda* is farmed mostly in costal districts of southwest and southeastern parts of the country, primarily in Khulna, Satkhira, Bagerhat, and Cox's Bazar districts because of their proximity to salt water and less field crop lands. PRICE and WFC (World Fish Centre) jointly implementing the GHERS (greater harvest and economic return from shrimp) initiative in greater Khulna districts. Besides, PRICE partnered with a few shrimp farming associations in Cox's Bazar districts to pursue improved farming.

PRICE under two signed MOUs with two semi-intensive farms in Khulna started providing technical assistances for capacity buildup for staffs in farming and in hatchery operation. To overcome low productivity and preventing disease outbreak, increasing stocking density and use of screened post larvae (PL) together with upgraded farming management is pursued.

Bangladesh shrimps in the world market fraught with danger of export ban due to contamination, use of banned antibiotics and malpractices. In order to avoid export bans, the industry needs to avoid contamination, malpractice of incorporating additives in shrimp to increase weight, implement traceability, and comply with Bangladeshi labor law.

Shrimp processing in this Q was brisk

Shrimp export in this quarter showed 41% jump

Currently, shrimp sub-sector in Bangladesh is fraught with danger of losing international markets due to alleged propaganda of malpractices and adulterations. PRICE and BFFEA (Bangladesh Frozen Food Exporters Association) jointly has taken steps to create mass awareness among the supply and value chain actors against malpractices and adulterations throughout the sector.

April to June is the peak season for shrimp farming, it is necessary to ensure a steady supply of screened, disease-free and traceable PL to farmers for stocking. Testing at Polymer Chain Reaction (PCR) laboratory is essential to ensure hatchery produced PL are disease-free, and PRICE therefore continued building the capacity of a private testing lab to ensure increased supply of screened PL.

PL production of bagda during this quarter was significant

As ongoing process through the GHERS initiative, PRICE continued promoting improved shrimp farming practices following an integrated approach. Besides, popularization and a market for virus-free, screened PL are also pursued. PRICE supports 54 extension facilitators (EF) aligned with 17 depots in Bagerhat, Satkhira, and Khulna, to organize thousands of farmers under contract farming systems to receive training and counseling on one of the three categories of improved farming: closed system pond technology (CST), modified traditional technology (MTT), or traditional best management practices (TBMP). Roughly 12,000 additional shrimp farmers were taught basic concepts of integrated shrimp farming using tested and virus-free PL and upgraded farming procedures during this reporting period.

Beside GHERS, PRICE also assisted two shrimp associations in Cox's Bazar for their capacity buildups on improved farming of shrimps using traceable inputs and screened PL. The association members so far used to practice traditional very extensive types of farming.

During this quarter, as follow up of Gulfair 5 partner processing plants those who visited the fair reportedly received additional order for frozen shrimp and more new orders are expected. The establishment of linkages with foreign buyers, especially in untapped and newly emerging sea food markets in the Middle East, was one of the primary outcomes of the Gulf Food Fair 2011.

Value added product in emerging for export


VAP from Bangladesh are mostly ready to cook

In this period, shrimp subsector partners increased their sales by about $4.4 million, invested more than $448,550 and created around 4,805jobs.

*GHERS Initiative*

The most important drive of the GHERS initiative is to boost shrimp production from a unit area by means of diverse techniques of farming. GHERS support improved output by initiate improved culture techniques (CST, MTT and TBMP). In this quarter, extension specialists and extension facilitators (EF) informally trained an additional 10,785 farmers on improved farming methods under three distinct categories: CST; relatively high density or semi-intensive farming; MTT; improved and upgraded management within the reach of farmers; and TBMP improved traditional through back-yard based trainings. By the end of 2011, a total of 22,560 farmers will be trained as a result of the GHERS Initiative.

A CST shrimp Farm

A TBMP shrimp farm

A MTT shrimp farm

Women integrated shrimp farmers

Since, improvement in farming is time consuming and sustainability for a technique needs refinement and fine tuning, hence, initial designed GHERS tenure was reviewed tentatively to extend for a further year during this quarter based on availability of funds. It is also decided that during the extended period new ideas and modalities together with follow-up activities will be carried out to sustain the new techniques pursuing by GHERS.

As part of providing improved farming trainings to new farmers on three diverse techniques mentioned, altogether 54 EFs are working aligned with 17 depots under an informal contract farming scheme. All EF received formal five-day residential foundation training on improved

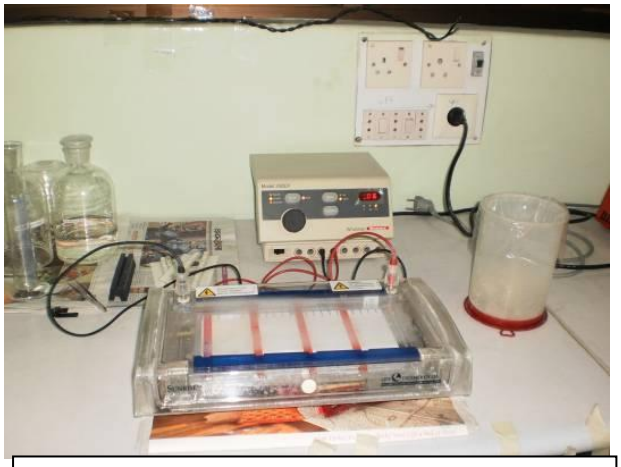
shrimp farming technologies and monitoring and evaluation and acts as master trainers. Along with the EFs, 17 depot owners/ representatives also participated in the training for their own capacity development on three techniques of farming based on stocking density and managements.

In addition, two one-day refresher trainings were provided to previously trained EFs and depot owners on various technical topics. A total of 52 participants attended the training, of which 35 were EFs and 17 depot owners.

### *Screening of Virus-Negative Post Larvae*

The popularization of screened and virus-free PL among non-PRICE farmers has not materialized yet as expected. Neither uses of screened PL for *bagda* farming has been made mandatory. This is partly due to cheap prices of *bagda* PL, partly premium price for screen PL and use of only screen PL does not guarantee disease-free shrimp production. PRICE continued its supports for the production of tested /screened virus-free PL of bagda through Polymerase Chain Reaction (PCR) Laboratory in Cox's Bazar owned by PRANTI, and has been assisted by PRICE-WFC since its inception. This quarter, the PCR lab tested over 450 samples from five hatcheries. Gazi Fish Ltd (GFL) also tests initial nauplii and PL in its final stages through the PRANTI laboratory.

Chemicals for testing at PCR Lab



Some equipment used in PCR Lab

*Integrated Shrimp farming trainings*

Farming integration: Pond dykes for climbers

Farming couple plant vegetable on dykes

*Women involvement Shrimp farming*

Shrimp farming long been considered in Bangladesh as masculine professions. Women participation in household aquaculture in fish farming has initiated through NGOs, PRICE also achieved considerable successes involving women in household fish farming mainly for food security and family based nutrition. However, PRICE has taken an initiative to encourage women participation in *bagda* based integrated farming in greater Khulna and greater Jessore districts.

Women integrated shrimp farmers training

Male & Female shrimp farmers training

*Semi-intensive Shrimp Farming*

Semi-intensive *bagda* shrimp culture under Bangladesh condition is done by two farms under SABINCO (Saudi-Bangladesh Industrial & Agricultural Investment Company Ltd). GHERS also assist a number of small scales high density farming termed as the CST. Two large farms in Khulna practice high density shrimp farming and produce more than one crop per year are Gazi Fish Ltd, (GFL) and S&M Shrimp Culture Ltd (SMSC). PRICE has partnership of cooperation with the farms and also provided technical assistances during this quarter for capacity development of their farming and farm management staffs as well as the GFL operated hatchery.

Peddle wheeling operation at the GLC

Quality grade bagda harvest from a farm

Both the GFL and SMSC uses tested screened PL for their farms and the GFL produce screened PL for itself and for the SMSC. The GFL also sells additional screened PL to farmers in Khulna region. During the reported period, the GFL produced approximately14.8 million screened PL, of which 7.39 million are used at GFL and SMSC, with the rest being marketed to local farmers.

*Popularization of screen bagda PL in Cox's Bazar areas*

The GHERS initiative undertaken by PRICE jointly with WFC is being executed in three districts in greater Khulna. The most *bagda* PL in the country is produced through hatcheries located in Cox's Bazar but most *bagda* farming are conducted in Khulna region. Since most hatcheries are in Cox's Bazar, so *bagda* larvae/ PL are tested taking samples from hatcheries and also certified in Cox's Bazar through the testing lab known as PRANTI[1]. Unfortunately, *bagda* farmers in Cox's Bazar are not using tested PL. PRICE has taken initiatives jointly with two partners in Ukia and Teknaf regions to popularize screen PL through training, demonstration, counseling and in-country study trips. During this quarter, technical consultants and group organizers are

Farmers in Cox's Bazar started using screen PL during this quarter in traditional farm

Aerial view of shrimp farms in Cox's Bazar

*Popularization Quality grade Inputs*

The use of hatchery produced PL, screened PL, lime, fertilizer and other traceable inputs and supplemental feeds for higher amount and disease free shrimps. PRICE is promoting the use of improved feed, seeds and other inputs through following outgrowing schemes among shrimp farmers. During this quarter, the project worked with 17 depot owners who are responsible to provide/establish linkages for quality grade inputs to farmers.

*Assisting Group Procurement and Sales*

Though the farmers in GHERS knows the benefit of group procurements of inputs and group marketing, however, shrimp farmers in Cox's Bazar under associations were informed the benefits through trainings and counseling. To buy inputs from the market, the project taught farmers to use group procurement methods, which helped them purchase high-quality inputs at relatively lower prices. Farmers were also linked to the sources of good quality inputs, like screened hatchery PL, for traceable production.

*Exploring new export markets for shrimp*

PRICE long been trying to expand shrimp export markets and through MoU signing initiated partnership with 6 processing plants in Khulna-Jessore region. In recent times, at the end last quarter, 11 representatives from 6 processing plants participated Gulfair in Dubai and new market opportunities has opened for some of the participating processing plants. During the reported period, Jalalabad Fish Processing plant received new orders from Morocco and Turkey and trade delegations for Mauritius and Dominican Republic is expected soon to visit the plant and orders from these new buyers are expected.

[1]PRANTI is only commercial PL testing lab in the country located in Cox's Bazar. The GFL and its hatchery are located in Khulna. Therefore, throughout the larval rearing phases it is not possible for GFL to test different stages of larval metamorphosis, so they only test first stage of larvae, the nauplii and post larval stage.

*Improving Access to Finance*

During April-June period two accesses to finance workshops were arranged at Jessore and Bogra. In the workshop at Jessore both Fish and shrimp based SMEs were invited. In the workshop at Jessore there were 56 participants, 16 from 9 banks and a non-bank financial institution. A number of shrimp based farmers were also present in the workshop from Khulna areas. Both bank representatives and aquaculture business personal actively took part in discussions. PRICE officials requested the aquaculture participants to establish rapport with banking officials present in the workshop for better understanding of credit issues. The open discussion between the value chain actors in shrimp farming and financial institutions appeared highly successful as both parties satisfied through deliberations. The news of the workshops was aired by electronic and print media.

*Awareness creation against mal-practice and adulteration*

During recent years, the shrimp exporters are facing various hurdles to export their products to the traditional markets (EU and USA). The buyers are concerned on safety of food items and also imposing different types of compliances on social and environmental issues like labor, traceability, mangrove destruction, and quality. PRICE is trying to improve the quality, food safety and labor compliance issues of Bangladesh Frozen Food Industries with some intervention like training, counseling, workshops, etc.

BFFEA recently planned to improve quality of raw materials of their product free from contaminant and adulterations. Root cause of the deterioration of raw materials is producers' (farmers') ignorance and some supply chain actors reportedly engage in adulteration. To improve farmer and other supply chain actors' awareness on malpractices and adulterations, BFFEA is going to organize awareness campaign program in 14 Upazila of Satkhira, Khulna and Bagerhat Districts. BFFEA plans to organize this campaign program jointly with PRICE and Department of Fisheries. There is indication that shrimp and fish export from Bangladesh during current fiscal year will get a big boost. Though export of frozen foods from Bangladesh is reportedly increasing, but buyers' rejection is still a concern for the processors. Other value chain actors like hatcheries, farmers, depots, and agents don't share any responsibility when any consignment is rejected by the importers. In recent years (2008 and 2009) many consignments were rejected by importing countries. The main reason for this rejection was not meeting the importing countries' standards and zero tolerance with respect to certain antibiotic and health hazard agents. Exporters face loss when any container is rejected. In the last few months there were reports in Channel 4 of UK and Aljazeera of Middle East regarding adulterations and malpractices of Bangladesh shrimps and to create awareness against adulterations and malpractices PRICE and BFFEA has taken initiative for massive programs at grass-root levels by signing a MoU during this quarter and the activities of the program will start soon. The signing ceremony got wide coverage in printed media.


MoU singing with BFFEA & PRICE on awareness creation against malpractices & adulterations

## QUANTITATIVE RESULTS

PRICE has provided technical assistance to train 22 EFs as master trainer to arrange backyard trainings to 10,785 farmers in 14 Upazilas in three districts. The comprehensive trainings to all 10,885 farmers will continue to coming months. All newly selected farmers received one or two backyard trainings during this quarter. Partners in shrimp subsector have increased their sales by $4.4 million in this quarter. More than $448,550was invested in the period.

**Achievements in Shrimp during Apr-Jun 2011**

| | |
|---|---|
| *Sales increased* | $4.4 million |
| *New jobs* | 4,805 |
| *Investment increased* | $448,550 |
| *Farmers trained in technology* | 10,885 |
| *Farmers trained in management* | 100 |

## Partner-Wise Results in Shrimp: Apr-Jun 2011

| Partner | Sales Increased (USD) | | | No. Total Jobs Created* | | | Investment Increased (USD) |
|---|---|---|---|---|---|---|---|
| | Domestic | Export | Total | Male | Female | Total | |
| **Gazi Fish Culture Ltd.** | 0 | 91,708 | **91,708** | (2) | 6 | **5** | **13,097** |
| **Din Bijoy Enterprise** | 0 | 13,542 | **13,542** | 1 | 0 | **1** | **0** |
| **Vairob Fish Agency** | 0 | 5,525 | **5,525** | 2 | 3 | **5** | **139** |
| **Razu Enterprise** | 0 | 49,591 | **49,591** | 2 | 0 | **2** | **0** |
| **Modina Matshya Prokolpo** | 0 | 861 | **861** | 0 | 0 | **0** | **0** |
| **Mondal Fish** | 0 | 28,206 | **28,206** | 0 | 2 | **2** | **0** |
| **Satata Fish** | 0 | 46,432 | **46,432** | 2 | 1 | **3** | **0** |
| **Satkhira Feed Industries Ltd.** | 182,559 | 0 | **182,559** | 0 | 0 | **0** | **0** |
| **GHERS by WFC** | 1,822,656 | 1,544,749 | **3,367,404** | 4,405 | 244 | **4,649** | **435,314** |
| **Rupali Sea Foods Ltd.** | 0 | (278,511) | **(278,511)** | 0 | 6 | **6** | **0** |
| **Organic Shrimps Export Ltd.** | 0 | 3,504,413 | **3,504,413** | (10) | (21) | **(31)** | **0** |
| **Jahanabad Frozen Foods Ltd.** | 0 | 600,446 | **600,446** | 36 | 49 | **86** | **0** |
| **Jalalabad Froozen Sea Foods Ltd.** | 0 | 672,008 | **672,008** | 32 | 53 | **85** | **0** |
| **Mofa Fish Processing Pvt. Ltd.** | 0 | (3,691,680) | **(3,691,680)** | 4 | 5 | **9** | **0** |
| **M.U Sea Foods Ltd.** | 0 | (200,460) | **(200,460)** | (14) | (4) | **(17)** | **0** |
| **Total** | **2,005,215** | **2,386,830** | **4,392,044** | **4,459** | **346** | **4,805** | **448,550** |

* Direct job information is complemented using a statistical model to estimate associated job creation across the value chain.

**Source of data: Partner interviews for enterprises. GHERS information is reported by the World Fish Center.**

Note: Considering the agricultural seasons highly dependent on various uncontrollable issues like climate etc. and the reporting season consisting only a part of a whole aquaculture season, any comment on the negative performances is yet to be made.

# LEATHER PRODUCTS SECTOR

During the first 10 months of the current fiscal year, Bangladesh's overall exports grew by 40.88 percent. An increase in buyers choosing Bangladeshi exports over those from China was one of the reasons of this growth. Among all major exported items, those that experienced a significant amount of growth during this period include: knitwear products, woven garments, frozen foods, agricultural products, rubber, leather goods, cotton and cotton products, jute and jute goods, home textiles, footwear**,** vessels (ships). Increased exports lead to increased production and value addition, which relies on a skilled workforce. PRICE is working in the leather sector, and focuses many of its activities on workforce development.

The past president of the Leather Goods and Footwear Manufacturers and Exporters Association of Bangladesh, Mr. Saiful Islam, recently said that the export prices of leather and leather products have increased in terms of value.

In the period of July 2010- June, 2011 overseas sales of leather products earned USD 552.64 millions. Like last year, footwear and leather goods business enjoyed significant growth and earned USD 254.81 millions (Leather footwear USD 199.39 millions and goods USD 55.42 millions). This year crust and finished leather also experienced a significant increase; worth of USD 297.83 millions.

Following are the specific activities during this period:

## A. ASSISTANCE TO SME DEVELOPMENT

1. Support SMEs in getting better access to bank loans: *PRICE helps 11 Aarong sub-contractors gain better access to finance*

Above: Linkage building workshop for Aarong subcontractors Below: An access to finance workshop for producers of Khudra Paduka Shamity

In June PRICE facilitated a linkage building workshop at the SME Foundation office. The purpose of this workshop was to assist 11 Aarong sub-contractors to gain better access to finance from banks. These small producers requested PRICE, through Aarong, for assistance in getting bank loans so that they can expand their businesses by investing in some machines and working capital.

PRICE, in collaboration with the SME Foundation, invited commercial banks and Eastern Bank Limited responded accordingly. As a part of the assistance, PRICE helped the small producers to collect and organize information and documents required by the banks and helped them to prepare their business profiles so the banks can better understand their businesses.

During the workshop, the sub-contractors presented their business portfolios along with their plans for expansion. A representative from Eastern Bank analyzed the portfolios and discussed various financing options with them and the producers. The bank representatives requested all the producers to complete their trade licenses as early as possible before they move forward with the loan process. Seeing the opportunities and prospects of getting their trade licenses, additional Aarong sub contractors joined the group and now 22 enterprises have trade licenses, enabling them to get the bank loans. In the next quarter, PRICE will organize a meeting with Aarong authority and the bank to help meet the requirements of the banks.

In another similar initiative, PRICE facilitated a linkage building meeting between the representatives of Bangladesh Paduka Prostutkarok Samity (Shoe Producers Association) and the SME Foundation partner financial institutions (PFIs) at Paduka Samity office in Bokshi Bazar, Dhaka in April 2011. The aim of this meeting was to discuss the need of the association to gain better access to finance for their members. PFIs will develop a plan to extend their support to the association. The president, general secretary, and two other executive members of the association and the general manager along with his deputy attended the meeting on behalf of the Paduka Samity and the SME Foundation respectively. PRICE is supporting these small shoe producers to become more competent and expand their market.

Linkage building workshop

*2. Linkage building initiatives between SMEs and service providers*

In April, PRICE assisted the Leather Technologist Small Entrepreneurs (LTSE) group in organizing a workshop session at their office to demonstrate the utility of 'Business Edge' - management training software. The software is designed to enhance the efficiency of SMEs. Business Edge is an International Finance Corporation (IFC) supported management training product that focuses on the needs of the owners and managers of SMEs. SEBA Limited, an IFC, conducted the demonstration on this software. PRICE has taken this initiative to serve two

purposes - to develop linkages between the existing service providers and enterprises and to assist PRICE supported SMEs to increase their institutional and managerial capacity.

Linkage building workshop

The SME participants explained their experiences and the difficulties they face as managers in running their business efficiently. Experts from SEBA Limited demonstrated the features of the Business Edge and attended a Q & A session with the nine participants from LTSE. SEBA was better able to understand the needs of the leather SMEs and is currently working on customizing the Business Edge software accordingly. Once finalized, these leather SMEs will be able to leverage this management tools for their development.

3. *Assists SME female entrepreneurs attend an IVLP in USA:*


PRICE assisted female entrepreneur to attend an IVLP in USA

One of the PRICE assisted enterprises and the only woman entrepreneur of LTSE group, the Managing Partner of Karigar took part in the Women and Entrepreneurship Category of the International Visitors Leadership Program (IVLP) in the USA in May 2011. This was the first time any small enterprise from Bangladesh's leather products sector received this opportunity to attend the program. The goal of the program was to promote the development of friendly relationships between USA and other countries of the world through business. The following were the overall objectives: to understand the basics of the US entrepreneurship model; to understand the dynamics of relations between associations and enterprises; and to understand how enterprises support each other to grow. This visit gave the PRICE participant an opportunity to build new and extended business relationships with

other program participants. After the program, the Karigar received letters of interest for outsourcing business from other participants from Jordan and Trinidad & Tobago.

PRICE is planning to facilitate an experience sharing workshop with the participant as the resource person. In this workshop other SME stakeholders will be able to learn about these valuable issues, particularly the way in which enterprises support each other to grow.

## B. ASSISTANCE FOR WORKFORCE DEVELOPMENT

### *4. PRICE-LFMEAB-Bengal workforce development program enabling the sector to generate more export earnings:*

As of June 2011 this tripartite skill development program between PRICE, LFMEAB, and Bengal Shoe Industries Ltd. (BSIL) has trained 418 new workers. Its aim is to develop the skills of 1200 new workers and to create job opportunities for them in the footwear sector. Each trainee has received formal two-month on the job training on cutting and/sewing-prefabricating and/lasting. Training is going on in two shifts to avoid the co-occupancy of the machines/tools. PRICE's consultant; one lead and two assistant trainers, are coordinating this Lakshmipur based training program.

In total 418 (male 71, female 347 ) workers have been trained and 261 (male 37, female 224) were trained during this period. Out of these newly trained people, 181 (male 15, female 166) got full-time jobs at BSIL. In the mean time, based on the presumed skill of these new workers, BSIL accepted fresh export orders from Italy. The training started in December, 2010.

*5. PRICE-LFMEAB-Apex extended training program in full swing*

The extended training program, started in February 2011, is in full swing. This current second phase is expected to create job opportunities for 1,200 new workers in the footwear sector by providing skills training and using experiences from the previous phase to better train the new workers.

In the next 12 months time, 1,200 new workers will be trained in five or six batches at the Apex Adelchi premises with modules developed by PRICE. These modules will focus on: industry safety, discipline and basics of shoe engineering. The cutting department workers will be trained on cutting direction, pairing, machine pressure etc. The sewing workers will be trained on skiving, splitting, folding, edge finishing, thread, needle, machine adjustment etc. The lasting workers will be trained on toe and heel lasting, machine adjustment, finishing chemicals etc. During this quarter, 326 new workers were trained and of that, 225 (male 28, female 197) newly trained workers have started full-time jobs at Apex.

The actions taken under this plan are expected to produce the following results at the end of the program- training and creating job opportunities for 1200 workers, increasing annual sector sales by approximately US$ 5 million.

The part time lead trainer (a PRICE consultant) has been coordinating the entire program, incorporating lessons learned from the previous phase.

*6. PRICE-LFMEAB-PICARD initiative; first of its kind in the sub sector*

Leather goods are the smallest segment of the whole leather sector. The number of players in this segment is very limited; only a few, despite its tremendous growth during the last couple of years. PICARD controls more than 90% of the exports in this subsector. While other subsectors, such as footwear, aggressively worked to start skill development initiatives, the leather goods subsector remained inert and showed little interest in such initiatives. Finally beginning to understand the importance of skilled workers, PICARD began collaboration with PRICE on development activities for leather goods.

This program will develop skills of 600 new workers in manual operations including manual stitching, perforating, cementing, trimming, and finishing. They will also learn other regular activities such as machine cutting, skiving, splitting, sewing etc. Each batch of 30-50 new workers is trained for two months under the supervision of four highly experienced PICARD staff in association with three PRICE trainee trainers. As this sector does not have adequate qualified trainers, the PRICE provided trainee trainers will be future assets to this subsector.

During this period 131 (male 75, female 56) new workers were trained and 80 (male 32, female 48) joined PICARD as full-time workers. This program started in November, 2010.

*7. Workforce development with Bay Footwear Ltd. ended successfully*

Started in November 2010, this tripartite skill development program that developed the skills of 200 new workers for the footwear sector was completed successfully during this quarter. All 200 trainees joined Bay Company and 100 (male 38, female 62) joined only during this period that started as the second batch. Each trainee received formal on the job training for the footwear sector on cutting, sewing, and lasting for two months each under the overall supervision of PRICE trainers.

*8. Workforce development with Apex Leather Craft & Footwear Ltd (ALFAL)- achieved its target in skills development*

This skill development program with LFMEAB and ALFAL that started in November, 2010 targeted 200 new workers to learn skills of making leather goods ended in this quarter. These 200 new workers learned the skills of goods making techniques. Each batch received on the job training for two months each in the following areas- cutting and sewing-prefabricating and assembling. During this period 50 (male 2, female 48) were trained and received full-time jobs at ALFAL. The program is supervised by a PRICE consultant using the modules compiled/developed by PRICE.

## C. OTHER SECTOR DEVELOPMENT INITIATIVES

*9. One point service center for the leather sector, COEL launched*

Centre of Excellence for Leather Skill Bangladesh Limited (COEL) is an initiative of the Industry Skills Council (ISC) of the leather, leather goods and footwear sector. COEL will act as a one point service center for skills development and productivity enhancement for the whole sector.

The leather sector has been identified as a thrust or priority sector by the GoB for its potential to achieve fast growth and employment generation. However, its lack of skilled manpower is a severe threat to its development possibilities. It is estimated that the sector requires over 70,000

skilled and semi-skilled workers to achieve its growth potential. But with wide mismatches between industry labor requirements and the training provided by the existing Technical and Vocational Education and Training (TVET) system, the sector has found it difficult to find the right human resources. COEL's Apprenticeship Project bridges this gap by providing relevant and appropriate training to meet the sector's needs. The total duration of this apprenticeship training will be one year, of which three months will be both on and off the job training at the floor level, closely monitored by COEL, and the remaining nine months will be workplace learning in factory premises based on competency-based log books. After a short orientation program, COEL will place apprentices with participating companies, according to their demand.

COEL opening ceremony

The USAID-funded PRICE project will play a key role financing and overseeing the COEL initiative. The TVET Reform Project will develop competency standards for priority occupations of the leather sector; curriculum development and design of the apprenticeship program, and will run Training of Trainers and workplace assessors programs for the potential trainers.


COEL classroom

Course and curriculum will be approved by the Bangladesh Technical Education Board (BTEB) under the overall supervision of Department of Technical Education. The apprentices will be registered with the Bureau of Manpower, Employment and Training (BMET)

Benefits of the course:

- The competency based training (CBT) system and structured workplace assessment is considered more effective and appropriate to industry requirements.
- The trainees will get dual certificates: one from the Bureau of Manpower Employment and Training (BMET) and another from the Bangladesh Technical Education Board (BTEB) once the proposed National Vocational Qualification Framework (NVQF) is approved.
- The industry will get a group of people with structured learning procedures that lead to higher productivity.
- Employers can hire "the right person in the right place" with the help of a NVQF certificate.

*10. PRICE assists workers of LFMEAB member organizations in getting access to low cost health services:*

PRICE linked another USAID-funded program, Smiling Sun Franchise Program (SSFP), to the Leather Goods & Footwear Manufacturers & Exporters Association of Bangladesh (LFMEAB). The objectives of this initiative were to assist the workers of the member enterprises of LFMEAB to get better access to health care services and to support SSFP in increasing their service outreach to the workers of the footwear and leather goods companies.

Following the PRICE orientation, a team from SSFP met the LFMEAB authority in May and discussed their program and the packages they can offer to the factory workers. Their packages normally cover health care services that might include medical consultations and lab tests. Now both parties are in the process of negotiating on the terms and conditions before they arrive at an agreement. It is also expected that if they can arrive at an agreement this will be implemented as a compliance activity by SSFP and LFMEAB.

*11. Exploring the potential of a new SME Cluster in North Bengal:*

In May 2011 the PRICE team visited a footwear manufacturing cluster (approximately 25 enterprises, mostly micro/cottage) in Kaluhati, Rajshahi and made a preliminary assessment of the potential of the cluster. The SME Foundation requested PRICE to be a partner to help develop this cluster. The unique features of this cluster are:

- All the enterprises produce similar type of products (mostly sandals)
- They are clustered around a road in the village
- Most of these are micro enterprises

Leather factory workers in North Bengal

The PRICE team visited 14 enterprises, talked to their owners and key workers, and collected information on machines, market etc. Later PRICE and SME Foundation prepared a joint analysis with the following findings:

1. They need better access to finance

2. The enterprises need technical assistance to increase their productivity

3. They need assistance to develop business linkages with potential buyers/market.

It was agreed that SMEF will address the access to finance issues while PRICE and the foundation will jointly work to develop a road map to address the technical assistance and business linkages issues. In the mean time, PRICE has already taken initiative to create linkages for them with other enterprises so that they can work as their subcontractors. PRICE invited few of these enterprises to participate in its upcoming events, in particular the Buyer-Seller meet in July 2011.

## D. QUANTITATIVE RESULTS

Partners in Leather products sector increased their sales by USD 6.4 million. Almost 100 percent of Leather Products sector partners' increased sales was for export purpose. FB Footwear increased their sales by USD 2.4 million which is the highest contribution in this quarter. Apex Adelchi Footwear increased their sales by USD 1.5 million and Landmark increased sales by USD 1.13 million. 636 jobs were created by the partners in the sector, the highest number of jobs was created by Apex Adelchi and Bengal Shoes.

**Achievements in Leather Products during Apr-Jun 2011**

| | |
|---|---|
| *Sales increased* | $6.4 million |
| *New jobs* | 636 |
| *Investment increased* | $0 |
| *Training for workforce development* | 507 |

## Partner-wise Results in Leather Products

| Partner | Sales Increased (USD) | | | No. Total Jobs Created | | | Investment Increased (USD) |
|---|---|---|---|---|---|---|---|
| | Domestic | Export | Total | Male | Female | Total | |
| **LFMEAB** | **0** | **6,426,000** | **6,426,000** | **115** | **521** | **636** | **0** |
| Apex Adelchi Footwear | - | 1,563,450 | **1,563,450** | 28 | 197 | **225** | - |
| Bay Footwear | - | 450,000 | **450,000** | 38 | 62 | **100** | - |
| Jennys Shoes | - | 247,050 | **247,050** | - | - | **-** | - |
| Landmark | - | 1,125,000 | **1,125,000** | - | - | **-** | - |
| Apex L/R Craft | - | 180,000 | **180,000** | 2 | 48 | **50** | - |
| PICARD | - | 423,000 | **423,000** | 32 | 48 | **80** | - |
| Bengal Shoe Industry Ltd | - | | **-** | 15 | 166 | **181** | - |
| FB Footwear | - | 2,437,500 | **2,437,500** | - | - | **-** | - |
| **LTSE** | **6,296** | **-** | **6,296** | **-** | **-** | **-** | **-** |
| BAG | 428 | 0 | **428** | | | **-** | - |
| Sassy | 4,729 | 0 | **4,729** | - | - | **-** | - |
| SA Authentic | 1,139 | | **1,139** | - | - | **-** | - |
| **Total** | **6,296** | **6,426,000** | **6,432,296** | **115** | **521** | **636** | **0** |

**Source of data: Partner interviews**

## 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.

One of PRICE's major cross cutting objectives is to improve gender equity, as well as increase the involvement of young adults into the horticulture, leather and aquaculture sector related workforce.

Throughout the fish and shrimp value chain, including shrimp processing plants, women's participation is traditionally low, on average at three percent. PRICE planned to increase women's participation from 3% at the national level to 20% among PRICE partners. Towards the goal to achieve 20% women among 60,000 aquaculture beneficiaries in the project, PRICE signed second an MOU with JSK, a women dominated farmer group and NGO, and signed an MOU with Polli-Bodu Kallan Sanghtha (PBKS), an association organized and operated by housewives to train hundreds of additional housewife during 2011 and first half of 2012 in homestead aquaculture focusing increased household income, self-employment, opportunistic employment, income generation, family nutrition, food security and women empowerment. Including women, socially and economically through integrated farming efforts has helped resource-poor farming families to increase their fish-based consumption and limit chronic malnutrition in rural Bangladesh.

PRICE tries to works with young adults and women as much as possible to ensure their participation in aquaculture. During this quarter, a total of 21,805 participants were trained under productivity, management and workforce development of which 4,568 were female participants. Total numbers of job creation were 4,805; out of which 346 are female.

Women also play a greater role in horticulture production by collecting and keeping seeds for the next crop, participating in harvesting, shorting, grading and cleaning alongside their male counterparts and preparing to send the products to the market. The involvement of women in vegetable production is about 48 percent, compared to only 11-20 percent in cereal production. In recent years women have taken an increasing role in the commercial production of horticulture products and a greater portion of their produce is going to the market.

Seventy six interventions took place this quarter in the horticulture sector which included the training of 416 women participants that collaborated with Krishok Bandhab Karmoshuchi, MUKTIR ALO AGRO BUSINESS, Uttaran and CHESTA Agro Enterprise. Farmers Training on Improved Technology on Egg-Plant Cultivation through Contract Farming, Training on Modern Farming, Pre & Post-harvest Handling of Mango. The training was on improved Eggplant Cultivation Technology Farming and included contract farming systems aimed at Increases the knowledge and patronize of women farmers through the training on eggplant cultivation and Modern Farming, Pre & Post-harvest Handling of Mango. That's result they are going to be involved in the vegetable and mango promotion activities. Yard meetings on the use

of organic fertilizer were organized for the women participants to ensure quality vegetable cultivation and adopt contract farming system. Total numbers of job creation were 717; out of which 126 are female.

The leather industry is the fourth biggest export revenue earners in Bangladesh and plays a significant role in the national economy. This labor intensive industry employs more than 700,000 direct and indirect people but unfortunately the presence of women particularly at entrepreneurial and managerial level is very limited due to lack of required capacity and skills. The only exception is in the sewing and prefabrication departments of footwear and goods sub sectors where estimated 40% of the workers are women. Moreover, the incidence of being dropout and discontinuation among women existing in the leather industry is high.

During this period, Total numbers of trained participants were 507; out of which 349 persons were female. Total numbers of job creation were 636; out of which 521 are female. They received Tk. 2,500-3,000 as salary plus benefits. That's result they 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 and ensured equal pay for equal wok both men and women.

The result was satisfactory because female participant's knowledge levels were good. After receiving the training most of female participants utilized their newly acquired skill and their capacity gradually improved. The trained female members are now more aware about their responsibilities. Now they play the key role in relevant field.

# Annex 1: PRICE Performance: Apr-Jun 2011 and Accumulated

| Indicator & Sector | Unit | Life of Project Target | Apr-Jun 2011 Performance | | | Cumulative Performance | | |
|---|---|---|---|---|---|---|---|---|
| | | | Target | Achievement | % of achievement | Cumulative planned | Cumulative achieved** | % of Achievement of LoP Target |
| **Total Value of Sales Increased** | **USD** | **200,000,000** | **16,044,400** | **26,439,841** | **165%** | **98,045,100** | **124,257,046** | **62%** |
| Domestic | | 116,994,616 | 8,244,690 | 16,910,623 | 205% | 45,917,760 | 73,020,251 | 62% |
| Export | | 83,005,383 | 7,799,710 | 9,529,217 | 122% | 52,127,340 | 51,236,794 | 62% |
| Aquaculture | | 105,000,000 | 8,000,000 | 17,684,113 | 221% | 59,125,000 | 88,573,492 | 84% |
| Horticulture | | 40,000,000 | 2,165,000 | 2,323,432 | 107% | 15,795,000 | 14,093,516 | 35% |
| Leather/Leather products | | 55,000,000 | 5,879,400 | 6,432,296 | 109% | 23,125,100 | 21,590,038 | 39% |
| **Number of Full-time equivalent Jobs** | **Number** | **40,000** | **3,120** | **2,595** | **83%** | **24,430** | **24,169** | **60%** |
| Aquaculture | | 26,000 | 2,000 | 1,242 | 62% | 15,750 | 15,059 | 58% |
| Horticulture | | 10,500 | 800 | 717 | 90% | 6,150 | 5,965 | 57% |
| Leather/Leather products | | 3,500 | 320 | 636 | 199% | 2,530 | 3,145 | 90% |
| Male | | 34,383 | 2,630 | 2,516 | 96% | 18,408 | 18,834 | 55% |
| Female | | 5,617 | 490 | 79 | 16% | 6,022 | 5,335 | 95% |
| **Total Value of Investment Increased** | **USD** | **4,000,000** | **350,000** | **813,048** | **232%** | **2,550,000** | **5,614,821** | **140%** |
| Aquaculture | | 2,100,000 | 150,000 | 796,413 | 531% | 1,150,000 | 4,239,391 | 202% |
| Horticulture | | 1,000,000 | 100,000 | 16,635 | 17% | 620,000 | 619,222 | 62% |
| Leather/Leather products | | 900,000 | 100,000 | 0 | 0% | 780,000 | 756,208 | 84% |
| **Number of persons participated in** | **Number** | **15,000** | **2,300** | **1,007** | **44%** | **11,900** | **10,645** | **71%** |
| Aquaculture | | 4,000 | 500 | 500 | 100% | 3,257 | 3,979 | 99% |
| Horticulture | | 2,500 | 300 | 0 | 0% | 2,130 | 1,366 | 55% |
| Leather/Leather products | | 8,500 | 1,500 | 507 | 34% | 6,514 | 5,300 | 62% |
| Male | | 8,042 | 1,380 | 589 | 43% | 7,700 | 3,982 | 50% |
| Female | | 6,959 | 920 | 418 | 45% | 4,200 | 6,664 | 96% |
| **No. of workers and managers trained on Bangladesh labor laws 2006** | **Number** | **1,064** | **115** | **0** | **0%** | **570** | **364** | **34%** |
| Aquaculture | | 1,064 | 115 | 0 | 0% | 570 | 364 | 34% |
| Horticulture | | 0 | 0 | 0 | | 0 | 0 | #DIV/0! |
| Leather/Leather products | | 0 | 0 | 0 | | 0 | 0 | #DIV/0! |
| Male | | 732 | 81 | 0 | 0% | 399 | 242 | 33% |
| Female | | 332 | 35 | 0 | 0% | 171 | 122 | 37% |
| **Number of Firms and farmers receiving USG assistance to improve** | **Number** | **31,300** | **4,110** | **6,200** | **151%** | **14,880** | **25,306** | **81%** |
| Aquaculture | | 26,047 | 3,500 | 5,270 | 151% | 12,875 | 20,521 | 79% |
| Horticulture | | 5,053 | 600 | 930 | 155% | 1,881 | 4,712 | 93% |
| Leather/Leather products | | 200 | 10 | 0 | 0% | 124 | 73 | 37% |
| Male | | 24,519 | 3,288 | 4,499 | 137% | 11,529 | 19,125 | 78% |
| Female | | 6,781 | 822 | 1,701 | 207% | 3,351 | 6,181 | 91% |
| **Number of Firms and farmers receiving USG assistance to access** | **Number** | **7,025** | **651** | **0** | **0%** | **2,204** | **5,722** | **81%** |
| Aquaculture | | 4,110 | 500 | 0 | 0% | 1,608 | 1,978 | 48% |
| Horticulture | | 2,900 | 150 | 0 | 0% | 583 | 3,737 | 129% |
| Leather/Leather products | | 15 | 1 | 0 | 0% | 12 | 7 | 47% |
| Male | | 3,502 | 326 | 0 | 0% | 1,202 | 4,090 | 117% |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Female | | 3,525 | 326 | 0 | 0% | 1,002 | 1,632 | 46% |
| **Number of firms and farmers receiving USG assistance to invest in** | **Number** | **72,300** | **6,440** | **17,931** | **278%** | **28,240** | **60,604** | **84%** |
| Aquaculture | | 58,600 | 5,200 | 16,035 | 308% | 23,138 | 49,161 | 84% |
| Horticulture | | 13,512 | 1,200 | 1,896 | 158% | 4,922 | 11,390 | 84% |
| Leather/Leather products | | 188 | 40 | 0 | 0% | 181 | 53 | 28% |
| Male | | 60,880 | 5,474 | 14,717 | 269% | 23,067 | 50,574 | 83% |
| Female | | 11,420 | 966 | 3,214 | 333% | 5,174 | 10,030 | 88% |

*Jobs are calculated using job model to estimate the across the value chain results of job creation.

**Source of data: Partner interviews for enterprises. In the case of farmer groups, small sample surveys for quarterly performance and statistical sample surveys for annual performance. GHERS information is reported by the World Fish Center. Direct job information is complemented using a statistical model to estimate associated job creation across the value chain (see Annex 2).**

# ANNEX 2

## Performance Management Plan

The M&E system is the basis for quarterly and annual reports to USAID. The PRICE team collects and analyzes performance information regularly; PRICE not only collects performance and impact data; it adds value to the raw data by performing appropriate analysis and providing context for data interpretation, thereby transforming raw data into useful information. Results from the analyses help determine whether adjustments to the project implementation plan are required. Finally, this information is conveyed to relevant internal and external parties through communications (i.e. knowledge sharing) and achieves impact as knowledge is acted upon. An understanding and agreement among all stakeholders of the project is developed to establish an effective performance management plan. All of them are the users of the system.

### a. Features of the System

The M&E system is designed to involve all technical team members and project counterparts. This approach has several benefits.

*Efficiency.* Because technical team members and counterparts have first-hand knowledge of their activities and resulting impacts, they are best suited to efficiently collect and verify basic M&E data in their respective technical areas.

*Ownership.* By being involved in project M&E efforts, technical team members can ensure that the information generated is relevant and consistent with the interests of the project while our counterparts will see the demonstrated success of reforms.

*Feedback.* Having collected and analyzed M&E information, technical team members and counterparts are aware of project progress and will be able to use M&E information to guide project implementation.

The project M&E is responsible for organizing data collection. They ensure that project team members have the necessary tools to collect data and that they collect it consistently and at the appropriate frequency. They verify data quality and analyze and report trends. Annually, they review the appropriateness of the PMP and make necessary additions or adjustments to the existing indicators. The COP/DCOP supervises the overall M&E system. The technical area specialists are responsible for managing the process of primary data collection and entry in their respective technical areas. They then use the information to make management decisions about implementation activities. These technical specialists communicate progress to PRICE counterparts informally during the course of technical assistance and formally in quarterly reports to help them make decisions about necessary and priority interventions.

PRICE collects basic M&E data from the various administrative and technical records of the project, specially-designed surveys, and focus groups. PRICE also consults records, statistics, surveys, and databases maintained by the Government of Bangladesh (GOB), USAID, other donors, and NGOs as additional sources of data. There must be a balance between M&E data

collection and technical work. Our M&E system is designed to allow the efficient collection of data by project staff or counterparts.

### b. The Indicators

The basic premise of the project is that true poverty reduction is about ensuring decent, sustainable jobs for vulnerable groups, with such jobs arising from increases in sales and investment across value chains in response to market demand. Indeed, the PRICE contract stipulates that sales, job, and investment increases are the essential project performance targets. As such, the focus of PRICE performance indicators is on sales, jobs, and investment—particularly for the benefit of women, young adults, and SMEs—to achieve equitable growth. These are the performance indicators for the overall strategic objective. All performance indicators have specific targets for the life of the project.

PRICE also uses tracking indicators that allow the project to track other aspects of its work and to support requirements for overall USAID reporting. For example, tracking indicators include disaggregation of performance indicators by gender, age, sector, region, exports, and SMEs. These indicators also track the number of SMEs receiving PRICE assistance and financing, training metrics, and other measures.

PRICE primarily collects data on performance and tracking indicators relevant to activities directly implemented by the project in collaboration with counterparts. This principle of "manageable interest" helps ensure that the results reported by PRICE's M&E system are within the project's ability to influence, particularly at the KRA level. Through these performance and tracking indicators, PRICE is able to accomplish the following:

- Capture and communicate major project impacts
- Track implementation progress against targets
- Supply information concerning major PRICE activities
- Identify problems constraining performance and resolution
- Contribute to USAID's own performance management and reporting needs

Performance of the project and of the three sectors (Aquaculture, Leather and Horticulture) has been measured using eight defined indicators so far. 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 assess impact or outcome of the project interventions. *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. All these indicators are measured quarterly or annually throughout implementation in order to evaluate progress towards targets agreed with USAID.

While the indicators included below are intended to be reported on over the life of the project, it is likely that adjustments will be necessary over time. Annually, PRICE reviews the PMP in coordination with USAID and other counterparts, and modify indicators as necessary.

### *Critical Assumptions*

In designing the PRICE M&E system, PRICE focused on indicators within the manageable interest of the activity. This approach allows the project to measure impacts that can, to a large extent, be attributed to the project. The project's ability to demonstrate improvement in these measures is based on the following assumptions:

- Absence of sociopolitical instability
- No major agro-climatic shocks during the project period. These include major climatic shock such drought, floods and other weather hazards.
- Generally stable fiscal and monetary policy
- Willingness of project counterparts and beneficiaries to carefully consider and implement project recommendations
- Access to available statistics and cooperation in conducting surveys

### *Custom Indicators*

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.
*It has replaced an older one upon consultation with USAID.

***Common Indicators***

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 MSMEs 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 MSMEs who are receiving USG assistance.

Indicator reference sheets have been prepared for each indicator in order to provide more detail on indicator definition, units of measure, justification, data collection, and where possible, proposed targets.

### c. Use of Case Studies

In some cases, case studies are used to provide deeper understanding of progress or to complement data collected by M&E. However, this should not be confused with the qualitative indicators. This is a very subjective approach and presents a plausible case that progress is being made by using illustrative examples. This is not used as substitute to the other precise measures.

Case studies are being prepared by the Communication personnel of the project, under direct supervision of COP. Sector Team Leaders and others can come up with the idea of any seemingly interesting cases being observed within the boundary of Project activities and the resulting impacts. Four types of case studies are prepared: case study, success story, first person story and, photo story. Usually 12 case studies are prepared each year which are submitted to USAID with quarterly and annual reports and then uploaded in the PRICE website.

### d. Source of Data

### Secondary Source of Data

PRICE M&E uses both primary and secondary sources of information to measure the indicators. Secondary sources can be a range of organizations including the government of Bangladesh (e.g. ministries), EPB (Export Promotion Bureau), DoF (Department of Fisheries), business associations, international organizations such as the World Bank, United Nations, universities, commercial firms and implementing partners like BSFF, BFFEA etc. Data is collected in regular intervals or based on need and a database is maintained for that. This is used for analyzing industry trend, project and sector performance etc.

## Primary Source of Data

Primary sources of data are the partners or the beneficiaries themselves. For the three custom indicators (increase in sales, creation of jobs and increase in investment), the source of information is the partners or beneficiaries themselves. PRICE collects data from them directly. PRICE has contract-bound targets in these three indicators. For custom indicator 4 & 5 and common indicator 1 & 3, data is taken from the quarterly training reports produced by the project Training Specialist, and adjusted for the indicators' requirement. Such adjustments include ignoring double-counting when one MSME has received training twice in the same category of assistance, i.e. improved management practices. For common indicator 2 (assistance to access bank loans or private equity), data is collected by regular monitoring of the partner. Sample survey method is not used for this indicator because the extrapolation of survey results might contain high sampling error.

#### e. Baselines

Baseline is the value of an indicator before the commencement of activities, used for comparison when measuring progress toward a result. Baseline periods are taken as one year right before the impacts are expected on the partners. For the three custom indicators (increase in sales, creation of jobs and increase in investment), PRICE technical team collects baseline information during the process of making MoUs or growth plans with the partners. However, the quality of data collected at that time may not be the optimal because the technical team has only initial idea about the partner at that point. So the data collected during the MoU process needs to be adjusted sometimes. For the producer groups or associations or cooperatives with hundreds of farmers,

baseline data is collected during the first training sessions conducted for the farmers. The hired consultants as well as the technical team members present in the training sessions collect the data from the partners in an organized way.

### f. Data Collection Tools

#### Data Elements

Many of the project's proposed indicators are aggregate indicators, made up of various data elements. M&E works with each technical team and counterpart to design database spreadsheets, forms, and surveys to capture and manage these data elements.

#### Tools

Formats for data collection have been designed by the PRICE M&E taking suggestions from the technical team. From time to time, these have been modified to fit the project requirement. PRICE uses M&E-designed formats to collect data on the first three custom indicators (increase in sales, creation of jobs and increase in investment) based on the different types, sources and methods of data collection. Detailed guidelines are attached with each format. All filled out data forms are signed by the interviewees and the interviewers.

There are other indicators which are related to training or assistance provided by PRICE. Quarterly Training Reports generated by the PRICE Training personnel is the source of information in this case.

### g. Methods of Data Collection

For the three custom indicators (increase in sales, creation of jobs and increase in investment), performance of the partners is collected quarterly from the partners after the baseline period ends. The quarters are calendar quarters. Baseline and quarterly performance data are collected in two ways: partner interview, and, sample survey.

The first method (partner interview) is suitable for the individual SMEs PRICE is working with. As the name suggests, the source of information for this method is the partner or client with whom the project 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 performance data on sales, jobs and investment was not readily available from the partners. Those partners do 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. The source of information in this case are the beneficiaries of the interventions, i.e. the members of the associations etc. 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 survey, 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. However, the 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. Thus it has been decided that from now on PRICE will conduct this type of full-fledged surveys only annually, at the end of US fiscal year, September.

For type b survey, 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, these types of small surveys are conducted from now on. However, these quarterly survey results are verified during the later annual survey.

### Data Collection by Third-Party

If necessary, PRICE may subcontract to a local research entity to conduct wide-scale surveys for this performance monitoring plan. Because of the huge size of surveys required at the end of each year, PRICE hires third party professional survey teams. These third party survey teams ensure the integrity of data to some extent as they are not involved in the project. M&E selects the surveyors from a pool of candidates, given the required qualification of a surveyor.

### Data Entry

For the data collected on enterprise performance in each quarter on the first three indicators, the respective Sector team performs initial data entry in the soft copy of the Enterprise data format (in Excel). This is later checked by M&E and confirmed for final submission. M&E then enters the data into the M&E database.

For the sample surveys conducted, appropriate format for data entry is required. Format for data entry is prepared by M&E. Easy to use MS Excel format is being used. For the small quarterly surveys of sample size 30, data entry is usually done by the respective Sector Team (or in some cases, the M&E Specialist) who have collected data. For the bigger surveys conducted by hired survey teams, data entry is done by the hired professional data entry operator. These third party survey teams provide data in soft copy as well as the hard copies of filled out formats.

## h. Quality Control

### Data Quality Analysis

M&E Team conducts visits to some sources of data to verify the collected data. These are random verifications and conducted without prior notice. Data verification is also done over telephone with the partner or beneficiary. M&E team talk to the partner or beneficiary and in this way, check back with the data already at hand. If any discrepancy is observed, it is consulted with the technical team before correction. At least 10% data verification is done as advised by USAID. If required, M&E team takes help from the technical teams for verification. After verification is completed, M&E signs on the data formats.

After that, the PRICE technical team provides initial quality control for the various raw data elements. Sector team examines the data to identify common errors including logical inconsistencies, out-of-range values, significant departures from trends, or other errors so that they can be immediately addressed.

The project M&E is responsible for data quality control after data entry. Around 10 percent of the tabulated data is compared with the raw data forms to ensure accuracy of data entry. M&E then perform basic data analysis and tabulation to identify potential erroneous data. When errors are identified early, M&E make appropriate corrections by coordinating and consulting with counterparts as appropriate.

As some indicators' information is collected from the training reports, the data quality of training report is also important. To ensure that quality, the Training Specialist conducts visits to the ongoing training sessions, consults with the partners and beneficiaries, checks the quality of training administration etc. and provides on-spot recommendations. S/he also gives the feedback to respective Sector team.

### Data Quality Criteria

Five related standards are used to examine data quality in more depth1.

Criteria for Good Data Quality
1. Validity
2. Precision
3. Reliability
4. Timeliness

[1] Definitions are derived from USAID Programming Policy, ADS Chapter 203 Assessing and Learning, p. 20.

5. Integrity

(1) Validity. An indicator should clearly and adequately represent the intended result.
• Attribution. Does the indicator measure the contribution of the project?
• Bias and/or Sampling Errors. Are there any biases or sampling errors that affect the data?

(2) Precision. Data should be sufficiently precise to present a fair picture of performance and enable management decision-making at the appropriate levels. Also, there should be a sufficient degree of confidence in the data's accuracy.

(3) Reliability. Data should reflect stable and consistent data collection processes and analysis methods over time, so that changes in data are not due to changes in the data collection method. In other words, if the data collection procedure were repeated, the same result should occur.

(4) Timeliness. Data should be timely enough to influence management decision-making. There are two key aspects of timeliness. First, data must be available frequently enough to influence decision-making. Second, data should be current enough when available.

(5) Integrity. Data that are collected, analyzed, and reported should have established mechanisms in place to reduce manipulation. There are generally two types of issues that affect data integrity. The first is inaccurate transcription. For example, a number might be incorrectly entered into a database system or recorded in a performance report. Data integrity is at greatest risk of being compromised during collection and analysis. The second, and more complex issue, is whether there is any incentive on the part of the data source to manipulate the data. For example, if a project obtains data from stakeholders who depend on funding from the project, the stakeholder may have an incentive to skew data.

### Data Quality Analysis (DQA) by USAID

USAID conducts annual DQA visits to PRICE project areas and meets partners, stakeholders, consultants. The team discusses with the partners, beneficiaries and also check on some required documents on the spot. USAID also meets PRICE personnel for this and discusses the whole data collection, quality control and reporting process in detail. Based on that, USAID prepares its annual DQA report for the project.

### Potential for Double Counting

PRICE works to minimize potential double counting through close coordination between sectors and technical teams. The project M&E reviews indicators with each team and identify areas where overlapping between sectors may occur. Once identified, the teams work together to determine how the data will be monitored and reported.

Double counting may also occur between PRICE and other USAID projects operating under SO 12. The M&E will identify these situations and work with partner projects to determine if the results may be better reported through one or the other project. However in some situations, it may be appropriate for both projects to monitor the same data. In these cases, the project may still monitor and report on the data but will report the magnitude of potential overlaps. With this information, USAID is able to adjust for double counting when consolidating indicators from various partners.

### i. Data Analysis

After ensuring data quality, the data is processed and analyzed by the PRICE M&E. MS Excel program has been used for the processing and analysis of data so far. For the three custom indicators (increase in sales, creation of jobs and increase in investment), separate processing techniques are used for data collected from enterprises directly (by using Enterprise Data Format) and the data collected from the combined body of beneficiaries, i.e. associations or cooperatives (by using sample survey method and format). Data from sample surveys is extrapolated for getting the figure for the whole populations (taking cultivable land area as the basis). PRICE is establishing a software for data entry and analysis of the collected data.

However, the process of measurement of performance is same for both: comparing performance period results with the baseline period data. The performance period data is compared with the same period in baseline and the resulting change is taken as performance. For example, while calculating quarterly increase in sales (custom indicator 1) of a partner, the gross sales of the partner in that particular quarter is compared with the baseline sales of the partner in the same quarter in the baseline year. That means:

**Increase in Sales in the quarter = Value of Sales in the quarter – Value of Baseline Sales in the same quarter**

For the second indicator, '**Total number of full-time jobs created',** the creation of jobs are considered across the value chain/s, wherever applicable. For the jobs created directly by the partners (only one node in a value chain), data is collected from the partners. Performance calculation from this data is as stated above: performance period data is compared with the same period in baseline and the resulting change is taken as performance.

For estimating the additional jobs created downstream or upstream or on-farm as a result of partner activities, PRICE has drafted a Job Model (with the help of a short term consultant supervised by DCOP) by September 2010. The Job Model estimates Job Factors for different type of partners (enterprise, group of farmers) in several parts: downstream, upstream and on-farm.

The *downstream Job Factor* gives the factor by which additional labor days are used by a partner for each additional unit of production in a period. The total quantity of increased production of a partner in a period is multiplied by the respective job factor and the resulting full time equivalent job is calculated. For example, if partner A has increased its production by 500 MT in a period and partner A's downstream job factor is 5 (labor days per MT of production), the resulting full time equivalent job created downstream is: (500X5)/150=16.67.

With the accumulated data at hand till September 2010, *the downstream job factor* has been used to calculate additional jobs created by the enterprises and farmer groups till September 2010 and reported in the annual report of FY 2010. For Oct-Dec 2010, Jan-Mar 2011 and Apr-Jun 2011 quarter also, downstream job ratio has been used in the same way.

The Job Model also helps to estimate the *on-farm job factors* created by the farmer groups because in Bangladesh scenario, a major part of the labor used in agriculture is family labors for which farmers don't keep records. The on-farm job factor in the Job Model calculates the total on-farm labor requirement factors of different partners which may include hired and/or family labor. For the accumulated data at hand till September 2010, on-farm job factor has been used to calculate additional jobs created by the farmer groups and reported in the annual report of FY 2010.

However, this first draft of the Job Model is being strengthened more to incorporate larger sample.

In each sector, all the partners' performances are summed up for getting the aggregate performance on the 3 indicators for the sector. Then the three sectors' performances are summed up to get the project performance.

While analyzing the data, M&E focuses on the segregation required by the definition of an indicator, i.e. by sector, age, region, export-import etc. After that, the quantitative achievements are linked back to the qualitative improvements by the partners. Qualitative results are collected through regular M&E activities as well as sector activity reports. M&E takes the consent of technical team before establishing such relationship in the analyses.

**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. Any possible overestimation will be offset by the multiplier effect of the project which PRICE does not measure for performance.

### j. Data Management Software

The existing PRICE M&E Database is designed to follow the development of appropriate recording and reporting formats and data collection tools that are consistent with the indicators and information need systems and M&E plans. Project reporting requirements have determined the type of data management, processing, analyses and reporting. Though the present system uses MS Excel application for data processing and reporting, still it takes considerable time and this situation is supposed to worsen with the higher scale of the project. Thus an automated M&E Data Management System or software that captures outputs and outcome indicators using a common user-friendly software package is being developed. This will add flexibility, efficiency to and enhance reliability of the PRICE M&E system.

Relational database structure has been used to develop the Data Management System for PRICE. This structure will allow automatic navigation in the database and support query facilities. The design includes module creation, ID creation, data analyses, upload and download options etc. Around 15 users will access the system and able to see the reports. Access to the System will be secured by password. 4 of these users will have access for data entry (but not uploading) to the system modules. M&E Manager will have administrative access to the system.

PRICE already signed an agreement with Grameen Solutions Ltd., a renowned software company in Bangladesh, to establish the system. They are developing the software using Apache Web Server, MySQL-5 as database and PHP-5 as the web scripting language. AJAX and Java Script frameworks are also being used. The system is expected to be launched in PRICE server in the beginning of August 2011. Then after one month of testing and bug fixing and uploading of previous data, the system will go live.