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Title: *The Shrimp Seal of Quality Program: an Integrated Approach to Addressing the Challenges in Bangladesh's Shrimp Sector*

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Problem Statement

The challenges facing the shrimp sector in Bangladesh are multi-faceted. On the one hand, shrimp farmers under threat of losing their crops and profits due to white spot virus and poor farm management do not have the kind of disposable time or income to dwell on relatively distant concerns of export market access. On the other hand, potential threats such as an export ban due to food safety and loss of markets due to poor traceability, business practices, or environmental and human rights concerns cannot be ignored. Unless these threats are addressed, they could ultimately undermine any gains made in productivity or capacity.

Between 2001 and 2003, Bangladesh exported approximately 40% of its shrimp to the US, 40% to the European Union, and 20% to Japan. Bangladesh accounted for almost 3% of global shrimp production during this period. In 2000, shrimp exports reached nearly US \$350 million. Thereafter, there was a decline in the export numbers, as is evident from the chart below. In part, broader global economic factors were responsible for these trends. The recession of 2000 and 2001 was closely correlated with shrimp prices, which declined during this period. However the decline in Bangladeshi shrimp exports could also be attributed to the inconsistent quality of products that were coming out of the country.

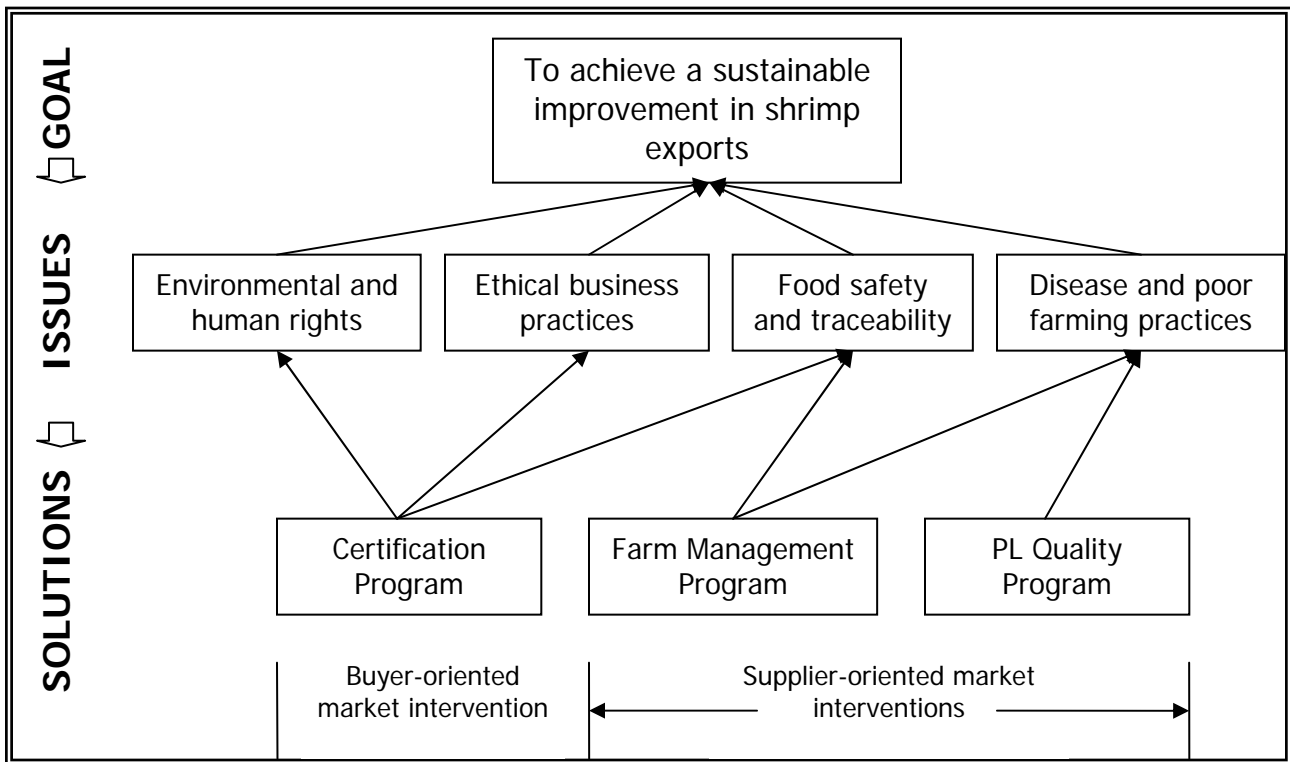
| Year | Quantity (Mill Lbs) | Value (Mill \$US) |
|-------------|------------------------------------|------------------------------|
| 1998-1999 | 44.28 | 242.23 |
| 1999-2000 | 62.73 | 322.43 |
| 2000-2001 | 65.37 | 349.75 |
| 2001-2002 | 66.61 | 252.18 |
| 2002-2003 | 56.48 | 297.04 |

Figure 1: Bangladeshi Shrimp Exports, Export Promotion Bureau of Bangladesh

Bangladesh's shrimp supply chain is plagued with problems and lacks mechanism for quality control and standardization. The result of this is an inconsistency in products that being exported. While some forward looking processors maintain high standard,

others send out products that are not only of a low quality, but also sometimes considered dangerous and unhealthy for consumption. In September 1997 the European Union (EU) had imposed a ban on Bangladesh's frozen food exports after an EU inspection team report condemned shrimp processing plants in Khulna and Chittagong for their failure to comply with EU quality control regulations. As a result, in March 1998 the government declared the Hazard Analysis Critical Control Point System (HACCP)¹, a mandatory procedure for export oriented shrimp processing plants. HACCP is a systematic approach to food safety that ensures the quality of the food production process. This response by the government and processors resulted in the EU lifting its ban in July 1998. In 2001 there were a number of cases in which consignments of shrimp were returned to the exporters because of their inability to conform to food safety requirements. It was feared that these cases would result in a repeat of the ban on Bangladeshi shrimp in some of its major markets.

Project Overview



The objective of the SSOQ program is to achieve a sustainable improvement in the volume and value of Bangladeshi shrimp exports. The SSOQ approach in the short and

¹ Hazard Analysis and Critical Control Point (HACCP, pronounced “has-sip”) is a control system used to prevent dangers in food production. The use of HACCP in the seafood industry has been standard in the United States since December 1997.

medium term is to intervene in the shrimp farming sector by introducing improved farm management practices and improving the quality of the primary input, shrimp larvae. On another front, SSOQ has introduced a program to certify shrimp producers (including processors, farmers, transporters, and potentially hatcheries as well) with the aim of creating a stable supply of quality shrimp from reliable suppliers for the export market. The SSOQ program has been developed with three main components, the Post-larvae Quality Program, Farm Management Program and Certification Program, each of which contributes to the fulfillment of the overall program objectives.

The key goals of the Post-larvae Quality Program are to catalyze the shrimp hatchery sector into providing tested, disease-free, quality larvae to the shrimp farming sector by providing PCR laboratory testing capacity for viral detection (white-spot disease, etc.), technical assistance, and marketing research and support. The PL Quality Program also improves market linkages in the supply chain of shrimp larvae from hatcheries to farms with the aim of ensuring larvae quality, integrity, and speedy distribution and delivery.

The Farm Management Program works to develop effective farm management practices that are easily applicable and improve production yields significantly while decreasing the risk of white spot virus for farmers. It also works towards the development of demonstration farms and field schools to disseminate information while providing training and consulting services to farmers in order to enable them to participate in the certification component of SSOQ. An underlying goal of this component which has been achieved is to create a nucleus of skilled technicians capable of providing technical services to shrimp farms.

The final component of the SSOQ Program is the certification program. This component is being undertaken in an effort to reduce the risk of contamination and degradation of shrimp produced in Bangladesh by introducing voluntary certification of food safety practices and traceability. On an international level the goal of this component is to improve the image of Bangladeshi shrimp in world markets by introducing process certification of food safety, traceability, environmental sustainability, labor practices, and social responsibility throughout the shrimp supply chain. It is believed that a forward-looking program such as this, of building a positive country image for Bangladeshi shrimp will be a strong contribution to the long-term stability of this important sector.

The SSOQ Program is currently at early stages of implementation however significant progress has already been made with all three of the components. A PCR laboratory has been established and is currently operational under the Post Larvae Quality Program. The lab enables hatcheries to test the larvae they produce to ensure that the larvae are not contaminated with the whit spot or other diseases. Additionally, work is also being done with three hatcheries to introduce quality control measures for

producing disease-free, quality larvae. One batch of these disease free larvae has already been delivered to farmers through the Farm Management Program.

Through the Farm Management Program, three batches of shrimp have been harvested, with noteworthy increases in production yields. The first demonstration included three farms that were harvested in October 2003. These farms experienced yields which were nearly five times greater than the national yield of 350kgs per hectare. The second crop demonstration was undertaken with thirty farmers and harvested in July 2004 with yields that were three times more than the national average. The third crop is currently being harvested. One of the most significant achievements of the farm management program has been the development of two highly effective farming systems. The first which was used in the first two batches called "Closed-System farming" results in high yields however requires significant financial investments and management. The second called the NTT (No Technology Technology) model of shrimp farming requiring simple changes in farming practices which can be conveyed effectively through farmer field schools. This production methodology results in annual yields that are two to three times higher than the national average, but perhaps more importantly has great ease of application. Going forward the SSOQ Program will propagate the NTT system to facilitate rapid expansion. Fifteen farmer field schools have been established under the Farm Management Program, with a projection that over 300 will be operational by the end of the project in December 2005. In order to facilitate and expedite all of the above activities, 20 technicians have been trained and groomed in providing sound farm management advice to farmers.

The Certification Program is currently in its planning stages and is yet to go into operation. Current interventions include the development of industry-wide standard for the shrimp sector on issues of food safety, quality assurance, environment, labor, and social responsibility. Another accomplishment of the certification program to date is the linkages that have been made with various international stakeholders including the Global Aquaculture Alliance (GAA), Network of Aquaculture Centers in Asia-Pacific (NACA) and World Wildlife Fund (WWF). The Certification Program is targeted to begin in the summer of 2005.

Project Impact

With a PCR lab established, the production of virus free shrimp begun, effective farm management practices developed and implemented, the formation of fifteen farmer schools, twenty technical support people trained and certification codes developed, the SSOQ Program had achieved a tremendous amount in a relatively short amount of time. One of the most significant implications of the program had been the raising of awareness of the need and ability to produce better quality outputs at all levels of the shrimp supply chain. Both hatcheries and farmers had been made aware of the importance of virus free larvae as one of the primary inputs into the shrimp production

system. Farmers were simultaneously made aware of and empowered by the knowledge that white spot virus could be controlled through the use of better inputs and more controlled pond management. And processors who were involved with the SSOQ Program saw the tremendous gains that could be achieved in exports because of improvements in traceability and food safety that the program facilitated.

Implications

The SSOQ Program has the potential to transform the shrimp sector in Bangladesh and significantly increase the quantity and quality of shrimp exports. By the end of the project in December 2005 all three of the program's components will be operational and working in a synchronized manner. The ability of the SSOQ Program to achieve its transformational goals beyond 2005 depends largely on the financial resources that are made available to it. However, even without further funding, the improvements in awareness levels of stakeholders, income generating capacity of the PCR labs, grass roots nature of the farmer field schools, simplicity of the NTT farming system and incorporation of processing plants to the program will render the program sustainable.