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# FOOD SAFETY IN FOOD SECURITY AND FOOD TRADE

## Case Study: The Shrimp Export Industry in Bangladesh

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**B**y the end of the 1970s, the Bangladesh seafood processing industry had expanded rapidly. But sanitary facilities, technology adaptation, and adequate training did not keep pace. Shrimp exports suffered in the late 1970s, and the U. S. Food and Drug Administration placed seafood imports from Bangladesh under automatic detention. This was only the beginning of the export market problems arising from standard product safety and quality that Bangladesh's shrimp industry faced over the next two decades. This case study illustrates the actions taken by Bangladesh, with the aid of external partners, to overcome substantial obstacles to participation in world shrimp markets.

### THE NEED TO BUILD A SAFE INDUSTRY

Recognizing both the potential for Bangladesh's exports and the problems with safety and quality of the product, the Food and Agriculture Organization of the United Nations (FAO) helped Bangladesh develop product standards, regulations, and fish inspection schemes in the early 1980s. In 1983, the Bangladesh government created a Fish and Fish Product Ordinance (Inspection and Quality Control) and in 1985 upgraded the inspection laboratory and its personnel.

FAO initiated a 1996 project to assist in the preparation of a fish safety and quality control program for the shrimp and fish plants in Bangladesh, based on the Hazard Analysis Critical Control Point (HACCP) approach. The program provided training in HACCP procedures to both the public and private sectors. It also informed the government about new requirements of major importing countries. A parallel Common Fund for Commodities/FAO project carried out by the Intergovernmental Organization for Marketing Information and Technical Advisory Services for Fishery Products in the Asia Pacific Region (INFOFISH) focused on the export promotion of value-added products and their sustainable development. Activities ranged from industry training to the development of export opportunities. Despite these efforts to upgrade product quality and safety, Bangladeshi shrimp exporters continued to suffer from real problems and those that importers perceived as real.

In 1997, the fourth leading export item in Bangladesh was frozen shrimp and fish, with a 7.3 percent share of the total export market. The major importers at the time were the European Union (EU), accounting for 34–50 percent of Bangladesh's exports, the United States at 23–38 percent, and Japan at 15–26 percent, depending on the year. At that time, the value per kilogram of Bangladesh's frozen shrimp was lower than average for the Asian region. Furthermore, Bangladesh had a reputation for producing seafood that sometimes did not meet minimum international standards as specified by the Codex Alimentarius Commission. With a low per-

centage of the world market, a lower-valued product, and a negative reputation in quality, Bangladesh has been a price-taker, rather than a price-setter.

### THE EU BAN

On July 30, 1997, the EU banned imports of fishery products from Bangladesh as a result of EU inspections of Bangladesh's seafood processing plants. Inspections found serious deficiencies in the infrastructure and hygiene in processing establishments and insufficient guarantees of quality control by Bangladeshi government inspectors. The ban was estimated to cost the Bangladesh shrimp-processing sector nearly US\$15 million in lost revenues from August to December 1997. (In this brief all dollars are US dollars.) The impact on both the industry and the economy of Bangladesh was substantial.

The only way Bangladesh can improve its export position in the shrimp market is to improve the safety and quality of its exports. Safety improvements over the last two decades, with a major effort in the late 1990s, have been made by the industry and government, and by bilateral and multilateral agencies providing technical assistance. While the short-term loss in foreign currency from the EU ban was high for a developing country, the ban did increase the commitment by industry and government to raise product quality to meet international standards. Both exporters and government made major investments in plant infrastructure and personnel training in order to achieve international technical and sanitary standards. This included new employee acquisition and employee training, sanitation audits, plant repair and modification, new equipment, new laboratories, and other costs.

### INVESTING IN SAFETY

Some upgrades were in progress at the time of the EU ban. By 1997, the Bangladesh shrimp processing industry had invested \$17.6 million in plant upgrades, the government had invested \$382,000 in laboratory and personnel upgrades, and outside partners had invested \$72,000 in training programs in Bangladesh. Unfortunately, these improvements were not in place early enough to prevent the ban. The total fixed investment cost of \$18 million was only slightly more than the nearly \$15 million in lost revenue from the ban over a period of five months. These improvements would have almost been paid for had they been implemented in time to make the ban unnecessary. Research has also determined that the annual recurring costs to maintain HACCP programs and meet international standards would be \$2.2 million for industry and \$225,000 for government.

Subsequent inspections by the EU determined that some plant improvements now met EU standards. Subject to certain

provisions, the EU ban was lifted for six approved establishments for products prepared and processed after December 31, 1997. By July 1998, a total of 11 plants had been approved for export to the EU. Collective efforts by the industry, the Bangladesh Department of Fisheries, and the Bangladesh Frozen Food Exporters Association have continued to strengthen the export-processing sector. By 2002, out of 65 plants licensed for export by the government, 48 plants had EU approval.

## THE CHALLENGES AHEAD

As the industry faces new challenges, ensuring safety and quality continue to be important elements in industry development. One concern is the sustainability of shrimp production. The revamped factories, having greater capacity, are mostly operating at about 20 percent of capacity due to limited supplies of shrimp. This has resulted in a growing focus on sustainability in the production sector with increased emphasis on hatchery production of shrimp post larvae for seeding the ponds, rather than harvesting from natural stocks. As hatchery production expands, Bangladesh has also placed increased emphasis on good aquaculture practices as well as certification of aquaculture facilities.

A second challenge is the need to become more diversified in terms of both products and markets. A large number of export processors are now producing increasing amounts of value-added products such as individually quick-frozen, peeled and deveined, and butterfly cut shrimp, as well as cooked products. In 2001 these value-added exports made up almost 25 percent of the total exports of 32,500 metric tons, valued at \$363 million. Technical assistance from FAO and INFOFISH continues to play a role in industry development by transferring simple, low-cost technologies for adding value and by matching buyers and sellers to facilitate market diversification. Industry and the government also continue to upgrade the export sector as a whole.

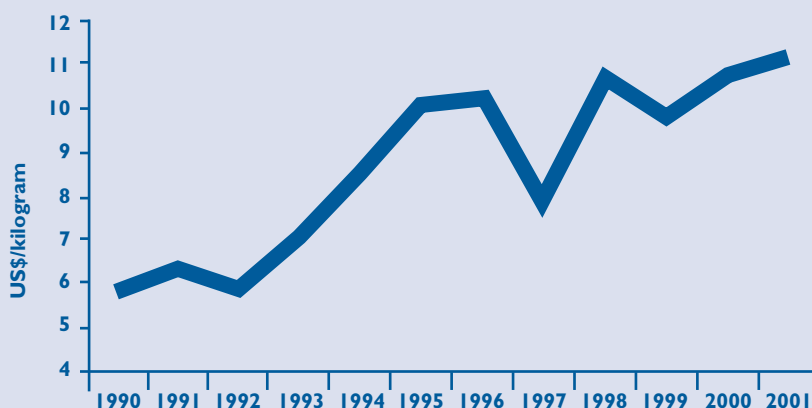
Improvements are making a difference because the unit price of exports has risen steadily over recent years, in contrast to the sharp decline in 1997 (see the figure). Some exporters are now recording an average unit price of more than \$15 per kilogram, a price comparable to that received by major exporters from the region. The average volume of exports has also increased from about 24,000 metric tons in 1990–92 to about 30,200 metric tons in 1999–2001. Improvements in food safety have thus set the stage for Bangladesh to become more competitive in the global market for seafood. Moreover, improvements in the shrimp sector have undoubt-

edly impacted the seafood and food-processing sectors as a whole, due to the intertwined nature of the food-processing industries in the country. Even in 2002, however, Bangladeshi shrimp exporters did experience some safety problems, and more testing laboratories were established.

Developing countries can often compete in world food commodity markets because export products can be produced at a lower cost than in developed countries, provided the product can meet minimum safety and quality standards. To accomplish this, developing countries need assistance not only with technology, but also with training workers to use technology and conform to world food-handling, sanitation, and personal hygiene standards. This normally requires a cooperative effort between a country's industry and government and its external partners. The Bangladeshi shrimp export case demonstrates that these efforts can be successful. It shows that developing countries, with careful guidance and focused effort, can successfully face the challenges of the global market. ■

For further reading see J. C. Cato and C. A. Lima dos Santos, "European Union 1997 Seafood Safety Ban: The Economic Impact on Bangladesh Shrimp Processing," *Marine Resource Economics* 13 (No. 3, 1998): 215–227; J. C. Cato and C. A. Lima dos Santos, "Costs to Upgrade the Bangladesh Frozen Shrimp Processing Sector to Adequate Technical and Safety Standards and to Maintain a HACCP Program," in *The Economics of HACCP: New Studies of Costs and Benefits*, ed. L. Unnevehr (St. Paul, Minn., USA: Eagan Press, 2000); and M. Rahman, *Market Access Implications of SPS and TBT: Bangladesh Perspective* (Jaipur, India: CUTS Centre for International Trade, Economics and Environment, 2002).

Value of Bangladesh's Shrimp Exports, 1990–2001



Sources: FAO Commodity Updates and Bangladesh Frozen Food Exporters Association.

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