



# Sanitary and Phyto-Sanitary Barriers to Trade and its Impact on the Environment

## The Case of Shrimp Farming in Bangladesh

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# About the Trade Knowledge Network

<http://www.tradeknowledgenetwork.net>

The goal of the Trade Knowledge Network (TKN) is to foster long-term capacity to address the complex issues of trade and sustainable development. TKN is a collaborative initiative of the International Institute for Sustainable Development and the International Centre for Trade and Sustainable Development; and kindly supported by the Rockefeller Foundation, The Norwegian Ministry of Foreign Affairs, International Development Research Centre (IDRC), Swiss Agency for Development and Cooperation (SDC), and the Canadian International Development Agency (CIDA).

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# The International Institute for Sustainable Development (IISD)

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The International Institute for Sustainable Development contributes to sustainable development by advancing policy recommendations on international trade and investment, economic policy, climate change, measurement and indicators, and natural resources management. By using Internet communications, we report on international negotiations and broker knowledge gained through collaborative projects with global partners, resulting in more rigorous research, capacity building in developing countries and better dialogue between North and South.

IISD's vision is better living for all—sustainably; its mission is to champion innovation, enabling societies to live sustainably. IISD receives operating grant support from the Government of Canada, provided through the Canadian International Development Agency (CIDA) and Environment Canada, and from the Province of Manitoba. The institute receives project funding from the Government of Canada, the Province of Manitoba, other national governments, United Nations agencies, foundations and the private sector. IISD is registered as a charitable organization in Canada and has 501(c)(3) status in the United States.

# The International Centre for Trade and Sustainable Development (ICTSD)

<http://www.ictsd.org>

The International Centre for Trade and Sustainable Development (ICTSD) was established in Geneva in September 1996 to contribute to a better understanding of development and environment concerns in the context of international trade.

As an independent non-profit and non-governmental organisation, ICTSD engages a broad range of actors in ongoing dialogue about trade and sustainable development. With a wide network of governmental, non-governmental and inter-governmental partners, ICTSD plays a unique systemic role as a provider of original, non-partisan reporting and facilitation services at the intersection of international trade and sustainable development.

ICTSD facilitates interaction between policy-makers and those outside the system to help trade policy become more supportive of sustainable development. By helping parties increase capacity and become better informed about each other, ICTSD builds bridges between groups with seemingly disparate agendas. It seeks to enable these actors to discover the many places where their interests and priorities coincide, for ultimately sustainable development is their common objective.

# North-South University (NSU)

<http://www.northsouth.edu>

North-South University (NSU), the first private university in Bangladesh, was established by the NSU Foundation with the initiative of a group of philanthropists, industrialists, bureaucrats and academics. The government of Bangladesh approved the establishment of North-South University in 1992. NSU was formally inaugurated on February 10, 1993, by Begum Khaleda Zia, Honourable Prime Minister of Bangladesh. The President of People's Republic of Bangladesh is the Chancellor of NSU.

North-South University's Department of Economics is one of the most prestigious and intellectually-demanding pursuits of knowledge. From its inception, therefore, North South University established the Department of Economics on a sound footing with a set of dynamic academic programs managed by a highly qualified faculty. NSU is committed to build this department as a Centre of Excellence in Economics in South Asia.

# Executive Summary

Beginning in the 1980s, shrimp grew as a major non-traditional export item, and today, shrimp is the second largest export from Bangladesh. Commercial culture of shrimp increased rapidly in the coastal belts of Bangladesh and has gone through several stages of transformation.

Currently, there are approximately 37,397 farms cultivating *bagda* (tiger shrimp) with an average farm size of 4.5 hectares. Twenty-five thousand tonnes of *bagda* were produced in 2001, and production has increased by 20 per cent per annum in the last 15 years. There are 124 shrimp processing factories in Bangladesh, mostly in Khulna and Chittagong, and around 60 hatcheries mostly in Cox's Bazar. There are also 30,000 hectares of land, representing 105,000 farms, under *golda* (sweet water shrimp) production, which produced 11,942 tonnes of *golda* in 2001. Because *golda* farms, which are mostly located in the Khulna division, are generally smaller than *bagda* farms (averaging 0.28 hectares compared to 4.5 hectares) *golda* cultivation supports a greater proportion of poor and marginal farmers. Moreover, *golda* shrimp farming is usually conducted in family farms by small farmers who have transformed their tiny plots of agricultural land into shrimp-cum-rice farms. Unlike brackish water cultivation of *bagda*, freshwater *golda* cultivation is not restricted to the coastal regions and is expanding at a rate of 10–20 per cent per annum.

There are 600,000 people employed in the shrimp sector in Bangladesh generating US\$301 million annually from *bagda* and *golda* farms (US\$243 million from *bagda* alone). However, the industry suffers from significant production inefficiencies and is exposed to important social and environmental risks.

One of the risks has emerged out of sanitary and phyto-sanitary agreements and subsequent standardization of production and processing methods using HACCP (Hazard Analysis and Critical Control Point) methods. As of now, HACCP is applied on the processing plants, but to ensure the quality of production and to reduce risks, shrimp farms are also required to adopt HACCP methods. Processing plants, being the large investors and the ultimate risk takers in the business, have already adopted the procedures mentioned in HACCP rules, but it has been quite difficult for them to impose it on small shrimp farms. Overall, the industry is in crisis—low production capacity at the plant and a very low yield at the shrimp farms.

The farming community lacks capital education and the motivation to accept the changes under the current conditions of the market. This study has shown that while most shrimp farmers are aware of the risks in business, they are not actively adopting the standards. Also, most farmers need to be trained on the impact of chemicals (used during crop production) on shrimp quality.

Using field data, the study developed a simulation exercise to show that under the current situation, the trend in the industry is toward intensive shrimp farming. This trend will threaten the social fabric in rural Bangladesh and will increase conflicts, as an important source of smallholder income is removed from the picture and the ownership in Bangladesh's most important export sector is intensified in the hands of relatively few operators.

The mitigation options available are to provide training to the farmers and make them aware of the risks in business; create meaningful liaison with the processing plants; and reduce inefficiencies in production. This is a more socially desirable response to resolve the current crisis in the industry.

The report was presented at the TKN policy workshop in Dhaka, April 24–25, 2003, attended by representatives of government, IGOs, NGOs, farmers, processors and scientists interested in the industry. In the ensuing discussion, it was observed that different stakeholders in the industry lack understanding in terms of their role and responsibilities. The mutual mistrust among the farmers and the processors, and the high rate of commission enjoyed by the middlemen, is a genuine problem for this industry. Because of this situation, it is suggested that a multi-stakeholder dialogue process be initiated by a neutral organization in order to build-up trust. The dialogue will also include developing a common policy prescription for the industry in an effort to move it towards environmental sustainability.