Issues and Challenges in Shrimp Export Marketing of Bangladesh

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ABSTRACT:
Shrimp also known as white gold of Bangladesh is the second largest export item of Bangladesh. The southern part of Bangladesh is suitable for cultivating shrimp. A notable number of shrimp processing factories are established in Bangladesh whose processing capacity is 350,000 metric tons per year. But it can process only about sixty percent of their total capacity. There are some challenges in increasing shrimp exports throughout its value chain. By overcoming these challenges it is possible to raise the export of shrimp from Bangladesh. This article tries to identify the issues and challenges of shrimp export marketing from Bangladesh and provides some recommendation to overcome those challenges.

Keywords: Frozen sea food, Shrimp, Export marketing, marketing mix, Bangladesh export item

INTRODUCTION:
Bangladesh is a river based country. A huge number of river, pond, khal, bil, haor, baor etc. are endowed with this country. Inland water resources of Bangladesh are considered to be one of the richest in the world both in area and potential for fisheries development. Being fortunate with these natural gifts the country abounds in a large varieties of fish species that is 260 of freshwater fish species, 24 inland water prawn species, 475 species of marine fish, 36 species of marine shrimp and 12 species of exotic fishes (DoF, 2008). Secondary studies extensively indicate that the Shrimp industry of Bangladesh is one of the most important contributors for economic nourishment at present and is the second largest export commodity of the country. The main cultured species is the tiger shrimp (locally known as bagda shrimp) of which the technical name is Penaeus. It is a marine shrimp and is cultivated in salty water. The next most important cultured species for export is the fresh water variety, locally called golda, technically known as macrobrachiumrosenbergii. The shrimp industry provides direct employment to over 600,000 people who in turn support well over 3.5 million dependents. Shrimp export is the second largest export item of Bangladesh. Although it is the second largest export item of Bangladesh but quantitative data shows that Bangladesh captured only 2.5 percent of world shrimp market. A significant amount of the area of southern part are using for shrimp culture. There are 98 (78 are registered by GOB) sea food processing plant in our country. Which total processing capacity are 3, 50,000 M. Tons per year, but those processing plants are utilizing only 14-16 percent of their total capacity (BFFEA newsletter). This indicates that although there is a notable capacity in terms of farm area and processing plant to export shrimp in world market but the reality is that Bangladesh cannot utilize its total capacity. This study was intended to find out the reason of problems relating to shrimp export industry of Bangladesh and also identify some measures to solve these problems.

OBJECTIVES OF THE STUDY:
(i) To analyze the current status of the shrimp industry in southwestern area of Bangladesh.
(ii) To find out the problems with the supply chain in the shrimp industry.
(iii) To identify the problems those affecting the shrimp farming and exporting.  
(iv) To identify some measure for developing shrimp exporting sector.

**THEORETICAL FRAMEWORK AND LITERATURE REVIEW:**

Seafood is any form of marine life regarded as food by humans. Seafood includes fish, mollusks (octopus and shellfish), crustaceans (shrimp and lobster), and echinoderms (sea cucumber and sea urchins). Edible sea plants, such as some seaweed and microalgae, are also seafood, and are widely eaten around the world, especially in Asia (see the category of sea vegetables). In North America although not generally in the United Kingdom, the term seafood applies also to any fresh water life eaten by humans, so all edible aquatic life can be referred to as seafood. Shrimp and lobster are one of the major parts of seafood those are widely consumed as rich food. There is two types of shrimp are mainly produced in Bangladesh.

a) *Peneus monodon* (tiger shrimp), more commonly referred to as bagda and  
b) *Macrobrachium rosenburgii* (giant freshwater prawn) commonly known as golda.

Coastal shrimp aquaculture in Bangladesh was initiated in the late 1970. Unique natural features, including large areas (approx. 2.5 million hectares) of low-lying tidal land, favorable environment supported by almost 600,000 ha of natural and 100,000 ha of planted mangroves, combined with a high market demand and economic returns, facilitated its rapid expansion. Coastal shrimp aquaculture is mainly confined to the districts of Khulna, Satkhira and Bagerhat in the Khulna Division and the districts Cox’s Bazar, Chittagong and Noakhali in the Chittagong Division. The main cultivated species is *Peneus monodon* (tiger shrimp), more commonly referred to as bagda and *Macrobrachium rosenburgii* (giant freshwater prawn) commonly known as golda.

Bangladesh produces 2.5 percent of the global production of shrimp. In Bangladesh the shrimp sector is the second largest export industry, giving employment to 840,000 people [Frankenberger, 2002]. Although the farming areas were mostly concentrated in few Upazilla of Khulna, Bagerhat, Satkhira and Cox’s bazaar, during 1980-90 the shrimp farming area expanded very rapidly, in 1982-83 the area was 39,496 ha, which extended to 1,15,088 ha i.e. 3.43 time increase. During 1990-2000, the expansion of shrimp farming areas is not remarkable, but a trend in Golda (Fresh water prawn) area expansion is going on. New area of Bhola, Barguna, Patuakhali, Jessore,Narail ,Noakhali and Panchagar are also including in shrimp farming.

Haque (1994), the market for frozen shrimp in the USA has not melted down as some feared might happen in the United States, as well as markets a retail range of frozen shrimp products. International pressure on wild, caught species, increasing global incomes, importing significant quantities of seafood products, and a strengthening demand in these countries, have all combined to result in a steady rise in international prices for shrimp, and the growing importance for cultured shrimp.

Khan (1994), in 1975-76 the country's fish production from all sources was 640,000 tons. In 1993-94, this production rose to 1,087,000 tons, whereas the per capita fish consumption went down from 33.4 g to 21g. This has happened simply because fish production increased at an arithmetical rate whereas the human population increased in geometrical proportion. The government-approved hatcheries produce around 120 corer giant freshwater prawns a year against the demand for 120 to 150 corers.

Selim( 1994) over the last two decades, shrimp farming has emerged as a major industry in Bangladesh. The impact of the process has economic, social and environmental dimensions. All of these may have serious implications for sustainability, not only of shrimp farming, but of the rural community in the coastal areas of Bangladesh. Problems with quality compliance arise at
preprocessing phase at the stage of handling of raw shrimp (harvesting, sorting by size and color, removal of heads and peeling which are often carried out under conditions and facilities that are unsuitable from hygiene perspective) and also at processing stage (absence of high quality water and ice, irregular electricity supply, poor infrastructure and transportation facility) which seriously constrain Bangladeshi firms' ability to pursue modern sanitary practices.

Mazid (1994) the country has vast and diversified water resources of 4.34 million hectors. The climate is also very suitable for fish production. In spite of that, the development of fisheries sector during the country’s early plan periods remained very slow. The average marine aquaculture farm is 4.5 hectors while the fresh water ponds on inland farms are usually no greater than 0.3 hectors. The constraints faced in the four sub-sectors (inland culture, inland open water capture, coastal fisheries and marine fisheries) impeding realization of their potential have been also enumerated. The essentially required policy support, approach and strategies, enabling increase of fish production to achieve nutritional food security during next five years and development of ancillary industries have been identified.

Karim (1995) brackish water aquaculture, also known as coastal aquaculture is a rapidly expanding farming activity and plays an important role in the overall fisheries development effort in Bangladesh. Marine and estuarine shrimp, fish and crabs are the farm products. Bagda shrimp (black tiger shrimp, peanuts monodon) is the primary target culture species, while fish, heterogeneous shrimp and crabs are the by-products. Amongst the coastal districts, brackish water aquaculture activities are most visible in Satkhira, Khulna, Bagerhat, Cox's Bazaar and Chittagong. Because of the unstable nature of the Bay of Bengal, the wide fluctuations of tide and salinity, and the absence of any sheltered places, e.g. lagoons or backwaters adjoining the sea, Mari culture (culture of marine organisms in marine environment) has not so far developed in Bangladesh.

Ahmed and Hossain (2000) noted that farmers directly sell their prawns to the local markets during November-January in Bagerhat district. The prawn supply chain from farmers to the international markets passes through a number of middlemen: field workers, prawn traders, agents and processing companies.

Khan (2003) a project funded by USAID has the potentials to increase the value of shrimp exports fivefold to $1.5 billion by 2010. The United States and the European Union (EU) each import 40 percent of the shrimp, with the remaining 20 percent going to Japan. Bangladesh is already among the top 10 exporters of shrimp in the world and accounts for some 3 percent of global production.

**METHODOLOGY:**
The research has been conducted based on both primary and secondary data. To collect the primary data a total number of 50 respondents were selected from Khulna district and Rampalupazilla of Bagerhat district. Among the respondents 20 were Producer (gher owner), 20 were exporter (processor) and rest 10 respondents were Depot or whole seller. A survey questionnaire was used to collect the primary data from the sample selected for this study. The questionnaire was furnished by adopting various types of question both Open ended question and Close ended question. A five point Likert scale was used in this study. Researcher also used observation and in-depth interview to gain insight into shrimp export industry of Bangladesh. To collect the secondary data, Recent annual and project reports of DoF, reports of other organizations like Export Promotion Bureau (EPB), Bangladesh Frozen Food Exporters Association (BFFEA), Bangladesh Bureau of Statistics (BBS) and Bangladesh Fisheries Research Institute (BFRI) and available documents from different related research publications were used.
FINDINGS:

PRODUCTION METHOD AND PRODUCTS:
There are various types of method are used in producing shrimp i.e. traditional cultivation or organic method, semi intensives and intensive method. The maximum productivity comes from intensive method cultivation. Some farms have adopted modified traditional farming techniques, and a few use semi-intensive farming techniques, the majority employ undeveloped traditional cultivation techniques.

MAJOR SHRIMP EXPORT MARKET:
The total volume of shrimp traded continues to rise in the three principal markets: Europe, the United States, and Japan. The greatest volume of shrimp from Bangladesh is exported to EU countries, with the United States being the second major consumer. The continuation of foreign buyers’ interest in Bangladeshi shrimp creates an opportunity for further expansion in this sector. Growth in the US market appears to have the greatest potential for absorbing Bangladeshi shrimp. Between 1990 and 2009, imports of Bangladeshi shrimp almost tripled, rising from 14,733 thousand pounds to 38,314 thousand pounds product weight (6,685 thousand to 17,384 thousand kg).EPB.
In 2009-2010 FY Bangladesh earns 3025.93 corers Taka from exporting frozen shrimp and fish (BFFEA newsletter, 2010). Those shrimp was exported to the USA, Belgium, UK, Netherlands, Germany, Russia, Saudi Arabia, Japan and Others.

EXPORTABLE PRODUCTS AND ITS PACKAGING:
The main forms of exportable products are head on shell on (HOSO), shell on (SO or "green headless shrimp"), peeled tail on (PTO), peeled undeveined (PUD), peeled and deveined (P&D), and butterfly tail on (BTTY-TO). Sometimes a letter 'F' is placed in front of these abbreviation for the presentation in order to state that the shrimp comes from a farm (example: FSO - farm, shell on). European and Asian markets prefer the HOSO presentation (which is a whole shrimp), while the American shrimp market prefers the remaining presentations.
Shrimp are graded according to their count per weight. HOSO shrimps are graded in units per kilogram (30/40, 40/50, 50/60, etc. pcs/kg). The standard pack is in a 2 kg box, 10 boxes into a master carton. The remaining presentations are graded in units per pound (U15, 16/20, 21/25, 26/30, 31/35, 36/40, 41/50, etc. pcs/lb). The standard pack is in a 5 lb box, 10 boxes into a master carton. The numbers in the grading code indicate maximum and minimum quantity of pieces per unit weight, with U standing for "under".

DISTRIBUTION CHANNEL:
Shrimp are marketed and commercialized with several issues in mind. Most shrimp are sold frozen and marketed based on their categorization of presentation, grading, color, and uniformity. The distribution channel of shrimp export market in Bangladesh are given below-

<table>
<thead>
<tr>
<th>Shrimp Farmer</th>
<th>Shrimp Faria</th>
<th>Shrimp Aratdar or Depot</th>
<th>Commission Agent</th>
<th>Processing Industry</th>
<th>Exporter</th>
<th>Foreign Buyer</th>
</tr>
</thead>
</table>

PRICING:
The pricing of shrimp sectors depends on the demand on foreign market. If the foreign market demand is increased, the price will increase. Sometime some faults were identified in Bangladeshi shrimp which causes a decrease in the market demand.
shrimp and then the price is decrease in the shrimp market. The prices of shrimp in wholesale market are as follows-

<table>
<thead>
<tr>
<th>Grade of shrimp (Golda)</th>
<th>Price (Tk./kg.)</th>
<th>Grade of shrimp (Bagda)</th>
<th>Price (Tk./kg.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Grade (5 pieces/kg.)</td>
<td>850-1000</td>
<td>20 Grade (20 pieces/kg.)</td>
<td>700</td>
</tr>
<tr>
<td>10 Grade (10 pieces/kg.)</td>
<td>600-750</td>
<td>30 Grade (30 pieces/kg.)</td>
<td>500</td>
</tr>
<tr>
<td>12 Grade (12 pieces/kg.)</td>
<td>450-500</td>
<td>44 Grade (44 pieces/kg.)</td>
<td>400</td>
</tr>
<tr>
<td>20 Grade (20 pieces/kg.)</td>
<td>400-450</td>
<td>66 Grade (66 pieces/kg.)</td>
<td>350</td>
</tr>
<tr>
<td>30 Grade (30 pieces/kg.)</td>
<td>350-380</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50 Grade (50 pieces/kg.)</td>
<td>280-300</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: personal observation and interview with farmer, whole seller and exporter.

PROMOTIONAL ACTIVITIES:
Actually in shrimp export marketing promotion plays a little role. Sometime promotional activities occurred by the Ministry of commerce and Export Promotion Bureau (EPB). Export Promotion Bureau of Bangladesh arranges different trade show of export shrimp from Bangladesh in foreign market. Trade show in foreign market is arranged for increasing the buying rate of foreign buyer. Different workshops and seminar are arranged for knowing the quality of Bangladeshi shrimp to the foreign buyer. Sometime the fisheries department of Bangladesh Government use mass media likes TV and radio for the awareness of shrimp farmers. Fisheries department of Bangladesh Government arrange different kinds of workshop, training and seminar for increasing the efficiency of shrimp cultivation to the farmers. Different magazine and trade papers are published by the fisheries department and Bangladesh Frozen Foods Exporters Association (BFFEA) which act as promotional tools.

FINDINGS FROM THE PRODUCERS OR FARMERS OF SHRIMP
Out of the total respondents, 30% were 10-15 years of experience of production, 40% were 18-22 years of experience and 30% were +25 years of experience. 60% of the total respondents have government registration of their gher and rest 40% does not have. Out of the total respondents 20% produce 200-1000 kgs pre year, 30% produce 1000-2000 kgs per year. The majority produce more than 2000 kgs per year (50%). Out of the total respondents 30% has a gher size of less than 50 bigha (1 Bigha=.33 acre), 40% has 50-200 bigha and 40% has more than 200 bigha. 60% respondent strongly agrees that due to the lack of capital sometimes productions are hampered. Where 30% agree about the statement and remaining 10% become neutral.
40% respondent strongly agree with the statement that low awareness level regarding proper farming practice resulting in high mortality rates and diseases, 40% agree with it 10% disagree with the statement.
60% respondent strongly agrees that lack of ability to forecast the symptoms of virus and other diseases create impediment to desired level of production. Where 30% agree about the statement and remaining 10% become neutral.
60% respondent strongly agrees that Government should share risk with shrimp production and provide other support such as training and development for the farmer. Where 30% agree about the statement and remaining 10% become neutral.
40% respondent become neutral to that quality of shrimp PL (post larva) provided by the hatchery is not good and causes lower rate of production. Where 20% respondents disagree with the statement 30% respondent was also agreed with the statement.

60% respondent strongly agrees that financial related complexities should be reduced from farmer and producer of shrimp. Where 20% respondents disagree with the statement and remaining 10% were neutral.

60% respondent strongly agrees to the statement that the relationship between the producer and supplier are not friendly. 30% of the respondent also agrees with the statement. Whether 10% of the respondents were disagrees with the statement.

40% of the respondent agrees that they provide necessary feed and fertilizer in gher. Where 50% says they do not provide so.

80% of the respondent disagrees that they follow some system of traceability where 10% of them strongly disagree with about it. And rests 10% of them keep silent about it.

**FINDINGS FROM THE MIDDLEMAN OF SHRIMP MARKETING**

The findings from the middlemen of this study are shown below. Out of the total respondents, 60% were 10-14 years of experience of business, 30% were 15-20 years of experience and 10% were more than 20 years of experience. Out of the total respondents 40% purchase 10-20 KGs per day, 40% purchase 20-50 KGs per day. The rest 20% purchase more than 50 KGs per day. Out of the total respondents 70% has no other sources of income and rest 30% has so.

60% respondent strongly agrees that they have faced some shorts of transportation problem. Where 40% of the respondents were agree to the statement.

40% respondent agrees with that they have storage facilities of their own. 60% disagree with that statement.

60% of the respondent disagrees that there is a shortage of capital of the middlemen and that creates problem. Where 10% of the respondent strongly disagree with the statement but 30% of them agree with the statement.

40% respondent strongly agrees that the relationship between the middlemen and farmer or producer is not always good in terms of payment to farmer. Where 40% disagree about the statement and remaining 10% strongly disagree about the statement.

50% respondent strongly agrees that due to the shortage of supply of shrimp sometimes middlemen are engaged in unfair means to buy shrimp. Where 30% agree about the statement and remaining 10% disagree about the statement.

60% respondent strongly agrees that due to ice crisis sometimes the freshness of shrimp is difficult to maintain. Where 20% respondents agree with the statement and remaining 20% were disagrees with the statement.

10% of the respondent strongly agrees they follow some system of traceability where 30% of them agree with about it. 30% of the respondent keep silent and rest 30% of them disagree with it.

**FINDINGS FROM THE EXPORTER OF SHRIMP MARKETING**

Out of the total respondents, 60% were 20-25 years of experience of exporting, 40% were 10-25 years of experience. Out of the total respondents 20% have the total processing capacity less than 1000 MT per year and 60% have the total processing capacity more than 1000 MT per year. 100% of the respondent has govt. license and EU approval. 100% of the respondent firm has more than 500 workers in their factory.
80% respondent strongly agrees that due to the lack of raw fish you cannot export more although there is a huge market demand of shrimp in world market. And 20% respondent also agrees with the statement.

90% respondent strongly agrees with the statement that lack of sufficient and continuous electricity supply by government is an important problem in shrimp exporting business. 10% of the respondents also agree with the statement.

70% respondent strongly agrees with the statement that insufficient number of ocean going international vessel in Mongla sea port increase the transportation cost. Where 20% agree about the statement and remaining 10% become disagreed.

20% respondent strongly agrees that imposing increasing number of Safety and food hygienic regulation make it difficult to comply with. Where 30% agree about the statement and remaining 50% disagree about the statement.

70% respondent strongly agrees with the statement that lack of sufficient and continuous electricity supply by government is an important problem in shrimp exporting business. 10% of the respondents agree with the statement and remaining 10% become disagreed.

70% of the respondent strongly agrees that continuous R & D activities by government is required and introducing new kind of shrimp like VENNAMI can increase the export of shrimp marketing. 30% respondents also agree with it.

70% of the respondent strongly agrees they follow some system of traceability where 30% of them agree with it.

**RECOMMENDATION:**

Mass level of the stakeholders need institutional and industry related education immediately. Activities like training programs, seminars, and trade-fair are still in the initial level and done on small project base. Industry wise expansion of these kinds of activities should be taken into account immediately.

Problems including high mortality rate, lack of virus screening facility and the unfair practices should be taken into account for the both operative and strategic level immediately. Enforcement of food safety outside the government should be explored. Following special measures should be taken immediately:

- Government can establish a specific zone for shrimp farming with registration number of each gher and provide necessary facilities to those farms. Thus traceability can be ensured also.
- Every middleman and farmer should provide a registration number and asked them to keep record of every transaction to implement traceability system.
- Shrimp processing industries or shrimp producer some time face lots of risk like disease problems, raising price of shrimp feed, natural calamities, falling of shrimp price etc. So Government should share the risk with them to ensure the productivity of shrimp industry.
- The exporter of Bangladesh can create a brand emphasizing on organic quality of their shrimp which can ensure higher price for those branded shrimp.
- Shrimp transportation should be facilitated with modern facilities like insulated & refrigerated carrier van and handling of shrimp with food graded plastic basket.
Introduction of quality certification system at all levels of the shrimp and fish based industry to ensure food safety, traceability, environmental sustainability and social responsibility is needed.

In Bangladesh electricity supply is not adequate but government should ensure the continuous electricity supply in shrimp processing industries.

Quality control measurement standard should be more developed.

Feed manufacturers should be allowed to import duty free essential ingredients that are not locally available.

Affordable rate of interest, easy repayment schedule should be introduced for the industry related entrepreneurs.

Vocational training centers should be established at aquaculture locations for hands-on training in aquaculture, post-harvest handling and processing.

Laboratory should have enough facilities with Modern and sophisticated, machine, instruments and methodology for testing quality parameters of exportable shrimp.

Ocean going vessel for the export of shrimp should be available. The ocean going vessel are not available as per its requirement. Exporter couldn’t export Shrimp in due time.

REFERENCES


[8] DOF (department of fisheries), 1994-district wise area and number of shrimp farms