Bangladesh Shrimp Industry: Current Trend and Expansion Plan
## Outline of Today’s Presentation

- **Bangladesh Shrimp Industry: Introduction**  [SM Huq]
- **Bangladesh Shrimp Industry: at a Glance**  [NR Biswas]
- **Food Safety Measures**  [SM Huq]
- **Adoption of ILO Core Labour Standards**  [SM Huq]
- **Our Challenges in the sector**  [SM Huq]
- **Bangladesh Strategy to address the challenges**  [SM Huq]
- **Plan of Action**  [SM Huq]
- **The way forward as we look at it**  [SM Huq]
Bangladesh Shrimp Industry: Introduction

- Today, I fondly recollect INFOFISH SHRIMP’88 conference in Bangkok (January 26-28, 1988) which I had participated along with other distinguished Shrimp sector policy makers and specialists.
- Shrimp sector is an important sub-sector of the overall aquaculture sector in Bangladesh contributing to employment generation, poverty alleviation, GDP and export growth.
- In Bangladesh, we produce mainly Bagda (P. monodon) followed by Golda (M. rosenbergii) and some catches from marine sources.
- Bangladesh opted to stay with Black Tiger (Bagda) and is trying to create a niche market in collaboration with other BT producing countries, importers and retailers; although GoB recently allowed to pilot some projects for Vannamei.
- Since Bagda accounts for 71.5% of total shrimp farming area and more than 90% of export earnings of total farmed shrimps, we would like to focus our discussions in this presentation only on Black Tiger.
Sundarbans, in Bangladesh, has the single largest mangrove forest in the world, and it is the natural habitat of:

**Royal Bengal Tiger**

and

**Black Tiger Shrimp**, called **Bagda** in Bengali.
Bangladesh Shrimp Industry at a Glance

Farming
- Bagda is an indigenous variety known to the community all along the 710 KM of coastal belt of Bangladesh from time immemorial.
- Currently, almost 2,70,000 shrimp farmers are engaged in the traditional or extensive practice of Bagda production over an area of about 1,85,000 hectare.

<table>
<thead>
<tr>
<th></th>
<th>Total Bagda Cultivation Area</th>
<th>184,821 Hectare</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Traditional/Extensive Bagda Cultivation Area</td>
<td>157,098 ha (84.54%)</td>
</tr>
<tr>
<td>2</td>
<td>Improved Extensive Bagda Cultivation Area</td>
<td>27,722 ha (14.92%)</td>
</tr>
<tr>
<td>3</td>
<td>Semi-intensive Bagda Cultivation Area</td>
<td>1000 ha (0.54%)</td>
</tr>
</tbody>
</table>
Bangladesh Shrimp Industry at a Glance (cont.)

Hatcheries
- The first commercial monodon hatchery was established in August 1993 and that marked the beginning of Bagda commercial farming in Bangladesh.
- Currently, we have **92 shrimp hatcheries** out of which **47 HATCHERIES** still rely on wild broods from Bay of Bengal and **2 SPF SHRIMP HATCHERIES** with technology from MOANA and CP.

Processing Plants
- Currently, we have **108 fish processing plants** with an installed processing capacity of about 4,00,000 MT out of which **73 are approved by European Union** and **8 by Russia**.
Bangladesh Shrimp Industry at a Glance (cont.)

<table>
<thead>
<tr>
<th>Year</th>
<th>Production (MT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-11</td>
<td>124648</td>
</tr>
<tr>
<td>2011-12</td>
<td>137175</td>
</tr>
<tr>
<td>2012-13</td>
<td>140261</td>
</tr>
<tr>
<td>2013-14</td>
<td>128313</td>
</tr>
<tr>
<td>2014-15</td>
<td>134693</td>
</tr>
<tr>
<td>2015-16</td>
<td>132730</td>
</tr>
<tr>
<td>2016-17</td>
<td>132657</td>
</tr>
<tr>
<td>2017-18</td>
<td>122550</td>
</tr>
</tbody>
</table>

Source: DoF FRSS 2017-19

![Farmed Shrimp Production (Aqua) MT](chart.png)

Bangladesh Shrimp and Fish Foundation (BSFF)
www.shrimpfoundation.org
## Bangladesh Shrimp Industry at a Glance (cont.)

<table>
<thead>
<tr>
<th>Year</th>
<th>Exports (MT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007-08</td>
<td>49907</td>
</tr>
<tr>
<td>2008-09</td>
<td>50368</td>
</tr>
<tr>
<td>2009-10</td>
<td>51599</td>
</tr>
<tr>
<td>2010-11</td>
<td>54891</td>
</tr>
<tr>
<td>2011-12</td>
<td>48007</td>
</tr>
<tr>
<td>2012-13</td>
<td>50333</td>
</tr>
<tr>
<td>2013-14</td>
<td>47635</td>
</tr>
<tr>
<td>2014-15</td>
<td>44278</td>
</tr>
<tr>
<td>2015-16</td>
<td>40726</td>
</tr>
<tr>
<td>2016-17</td>
<td>39706</td>
</tr>
<tr>
<td>2017-18</td>
<td>36168</td>
</tr>
</tbody>
</table>

### Shrimp Exports from Bangladesh (MT)

**Source:** FRSS, DoF, 2017-18

Bangladesh Shrimp and Fish Foundation (BSFF)
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### Bangladesh Shrimp Industry at a Glance (cont.)

<table>
<thead>
<tr>
<th>Year</th>
<th>Exports (Mn USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007-08</td>
<td>336.93</td>
</tr>
<tr>
<td>2008-09</td>
<td>322.84</td>
</tr>
<tr>
<td>2009-10</td>
<td>412.17</td>
</tr>
<tr>
<td>2010-11</td>
<td>548.90</td>
</tr>
<tr>
<td>2011-12</td>
<td>462.90</td>
</tr>
<tr>
<td>2012-13</td>
<td>434.24</td>
</tr>
<tr>
<td>2013-14</td>
<td>530.56</td>
</tr>
<tr>
<td>2014-15</td>
<td>506.11</td>
</tr>
<tr>
<td>2015-16</td>
<td>459.01</td>
</tr>
<tr>
<td>2016-17</td>
<td>456.92</td>
</tr>
<tr>
<td>2017-18</td>
<td>421.39</td>
</tr>
</tbody>
</table>

**Shrimp Exports from Bangladesh (Mn USD)**

Source: FRSS, DoF, 2017-18

Bangladesh Shrimp and Fish Foundation (BSFF)
www.shrimpfoundation.org
To support shrimp sector growth in a sustainable trajectory, Bangladesh has been consistently improving its regulatory framework:

- The Fish and Fish Product (Inspection and Quality Control) Ordinance, 1983
- The Marine Fisheries Ordinance, 1983
- The Marine Fisheries Rules, 1983
- The Fish and Fish Product (Inspection and quality control) Rules, 1997, amended in 2008
- The Fish Feed & Animal Feed Act, 2010
- The Fish Hatchery Act, 2010
- The Fish Feed Rules, 2011
- The Fish Hatchery Rules, 2011
- The Fisheries Quarantine, Act 2108

Relevant Policies:
- National Fisheries Policy 1998
- National Shrimp Policy 2015
- Policy Guideline on National Residue Control Plan 2011
- Guidelines for the Aquaculture Policy Guideline 2015
- Compliance Guidelines for Fish Feed Production, Import & Marketing, 2015
Food Safety Measures

In Bangladesh, we are giving equal importance to measures relating to

- **Testing** of Quality failures
- **Prevention** of Quality failures by educating the stakeholders in the value chain
Food Safety Measures: Laboratory Services for Testing

- **Department of Fisheries (DoF) maintains 3 Laboratories with accredited testing scopes (according to ISO 17025:2005):**
  - a. Fisheries Quality Control Laboratory, Dhaka
  - b. Fisheries Quality Control Laboratory, Chittagong
  - c. Fisheries Quality Control Laboratory, Khulna

- **Sub-contracting Laboratories:**
  - IFST Lab., BCSIR, Dhaka
  - Pesticide Lab, Bangladesh Ag. Research Institute (Pesticide residues)
  - Chemical division, Atomic Energy Commission
Food Safety Measures: Training on GAqPs and HACCP

We have been investing a lot on training on GAqPs and HACCP

BSFF developed training modules and imparted trainings on Good Aquaculture Practices (GAqPs) and Hazard Analysis and Critical Control Point (HACCP) in collaboration with DOF (Department of Fisheries), JIFSAN (Joint Institute for Food Safety and Applied Nutrition), a joint initiative of US-FDA and University of Maryland, AFDO (Association of Food and Drug Officials) and HACCP Alliance

Exchanging of agreement of cooperation between University of Maryland and Bangladesh Shrimp and Fish Foundation signed on 23rd March, 2010 in presence of JIFSAN (a joint initiative of USFDA and University of Maryland) and USFDA officials

Bangladesh Shrimp and Fish Foundation (BSFF)
www.shrimpfoundation.org
Supplementing Government initiatives, BSFF in particular helped develop Codes of Conduct for 10 segments of aquaculture and fisheries value chain for Government of Bangladesh in consultation with Global Aquaculture Alliance (GAA) and duly approved by Ministry of Fisheries and Livestock

- Black Tiger or Bagda Shrimp (*Penaeus monodon*) Hatchery
- Galda Shrimp (*Macrobrachium*) Hatchery
- Black Tiger or Bagda Shrimp (*Penaeus monodon*) Farm
- Galda Shrimp (*Macrobrachium*) Farms
- Feed Mill
- Shrimp Collection and Service Centre/Depot
- Ice Plants
- Fishing Boats and Vessels
- Shrimp or Fish Carrier Transport Van
- Fish / Shrimp Processing Plants
Food Safety Measures: Launching of Codes of Conduct

Launching of Code of Conduct by Fisheries Minister H.E. Mr. Muhammed Sayedul Hoque on August 02, 2015

Bangladesh Shrimp and Fish Foundation (BSFF)
www.shrimpfoundation.org
Food Safety Measures: Status of Residue Monitoring Program (RMP)

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total NC</td>
<td>34</td>
<td>49</td>
<td>23</td>
<td>7</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>% of NC</td>
<td>2.53</td>
<td>3.68</td>
<td>1.66</td>
<td>0.52</td>
<td>0</td>
<td>0.0008</td>
<td>0.0007</td>
</tr>
</tbody>
</table>

- National Residue Control Plan under RMP covers shrimp, fish and fish feed samples to monitor the status of undesired chemical substances in fishery products.
- NRCP results indicated Non-Compliance reduces remarkably over the years.
- Sample designed as required by EU Council Directives 96/23/EC, Decision 89/187/EEC and Decision 91/787/EC
EU Granted Waiver to Bangladesh on Submission of Analytical Test Reports in 2015

- EU grants waiver on submission of analytical test reports at their port of entry in 2015 (Commission Decision 2015/2260 of 3 December 2015).

Based on the results of the recent FVO Mission’s audit and on the very low number of non-compliant consignments, it appears unnecessary to require that consignments of the products imported into the European Union from Bangladesh be accompanied by analytical tests.
Bangladesh Shrimp Industry adopts ILO Core Labour Standards

We have launched a unique initiative in the region to help adoption of core labour standards in the sector:
BSFF facilitated collaboration among Bangladesh Frozen Foods Exporters Association (BFFEA), Bangladesh Shrimp and Fish Foundation (BSFF) and American Center for International Labor Solidarity (ACILS) for adoption of ILO Core Labour standards

Bangladesh’s frozen food exporters tie up on March 24, 2013 with the US-based Solidarity Centre to promote labour standards in the fisheries sector in a major initiative in the presence of Secretaries of Commerce, Fisheries, Foreign Affairs and Labour and US Ambassador to Bangladesh H.E. Mr. Dan Mozena.
Bangladesh introduces a unique ADR for Resolution of Labour Disputes (cont.)

With full Government support, BSFF has also facilitated introduction of a unique Alternative Dispute Resolution (ADR) Mechanism for resolution of labour disputes.
Our Challenges in the Sector

- Mismatch in the growth and unintegrated development of different components of shrimp industry: processing, hatchery and farming.
- **Weaknesses** in market linkages.
- Lack of access to institutional finance: overwhelming dependence on middlemen.
- Inadequate availability of **quality seeds and feed**.
- **Low per hectare average production**.
- Risks and prevalence of diseases and resultant disincentives for farmers.
- **Scarcity of raw materials for our processing plants**.
- Stiff price competition from Vannamei
- Globally, the relative production of Black Tiger is now significantly less than that of Vannamei.
- International market uncertainties and volatility in international prices.
Bangladesh Strategy to Address the Challenges:
Clustering and Empowering of Small Farms

We are working to overcome our challenges. We are actively promoting a cluster approach. The Approach is based on the following:

A. The Basic Principles

A.1. Clustering of small farms.
A.2. Eco-friendly with focus on conservation of environment, especially mangrove forests.
A.3. No horizontal expansion, only vertical expansion of existing shrimp farms.
A.4. Use of only SPF PLs in the cluster of farms to reduce susceptibility to diseases.
A.5. Focus on improved extensive farming practices for production of almost natural products.
B. Our initiatives aim at:

B.1. **Better area management** by careful selection of suitable farm sites and mobilizing of selected farmers into clusters

B.2. **Establishing backward linkage** between farms with input suppliers on the one hand and **forward linkage** between farms and exporters/processors on the other.

B.3. **Imparting Trainings** for capacity building (GAqPs, BMPs, HACCP, GFvPs etc.) for compliance with standards relating to food safety, environmental sustainability, economical viability and social responsibility including labor rights.

B.4. Digital record-keeping of production data all along the value chain for introduction of **E-Traceability** and promoting transparency and accountability.
C. **We value empowerment of farmers to ensure:**

C.1 Financial empowerment by promoting access to institutional finance based on Bankable business plans, and thereby reducing the current overwhelming dependence on middlemen and promoting economic sustainability.

C.2 Socio-economic empowerment by having representation of the cluster farmers on the Project/ Cluster Management Committee headed by Upazilla Fisheries Officer along with other representatives from relevant stakeholders and social recognition of the farmers by equipping them with Smart Cards.

C.3 Knowledge empowerment by acquiring knowledge on GAqP, BMPs, CoCs etc. will contribute to the promotion of environmental sustainability.
Proposed Plan of Action

- The Government has **high priority** for the sector and has well defined pro-Bagda development policies/ strategies/ plans, acts, rules which will help.

- The draft National Action Plan proposes to incrementally increase production by converting existing **Traditional/Extensive** Bagda farms with an average yield of **330 Kg/hectare** to **Improved Extensive** culture practices with an increased average yield of **1200 Kg/hectare**.
Proposed Plan of Action (cont.)

- The draft National Action Plan stipulates, among others, setting up of about 20 SPF Bagda hatcheries (currently, there are 2 SPF Bagda hatcheries) to supply about 3 billion PLs by next 3 (Road map 2021) years with an objective of additional production of 55,720 MT of shrimp and export earnings of 1 billion USD accordingly.

- A **US$248 million** development project with support from World Bank is presently being implemented in the country. Of the amount, **US$30 million** will be given as incentives in the form of GRANTS for private sector investments in SPF hatcheries, Brood Multiplication Center (BMC) and cluster farming practices.

- More importantly, there is still a **niche market** for Bagda in important consumer countries like Japan, Europe, USA and China—an opportunity that we would like to seize with other black tiger producing countries.
Investment/ Collaboration Opportunities for Foreign Partners

Our future plans for the sector offer opportunities for foreign collaboration in the following areas:

- Investment in the hatcheries for SPF and high healthy seeds production
- Introduction of quality and cost-effective feeds and aqua inputs
- Disease diagnosis, prevention and mitigation measures
- Targeted training and introduction of better farm management practices
- Investment in model contract farming arrangements with co-partnership of interested stakeholders
- Regular information sharing on market trends, developing effective marketing strategies and introduction of third party certification
- Investment and training on offal management related activities
The way forward as we look at it

- With the secular decline of share of Black Tiger from its global production share of 80% in 2000 to only 14% in 2017, there is a threat of its extinction as a shrimp species.
- We would like to join hands with partners to overcome this challenge.
- Recently during the last GOAL conference held in Chennai last month, the representatives from shrimp farming countries, leading importers and retailers from Europe, USA, Japan and China, aquaculture scientists, disease specialists deliberated on how to revive the market and production of Black Tiger and a small group of volunteers has been formed to continue the dialogue and come up with concrete strategies and action plans for the purpose.
The way forward as we look at it (cont.)

- In this conference, I would request representatives from Black Tiger farming countries to join the initiative launched at Chennai.
- As it was recognized at GOAL conference, we can, among a whole range of initiatives, work to:
  - Consolidate and enhance the breeding technologies
  - Promote organic Black Tiger markets
  - Development of SOPs, GAqPs for Disease Management for Black Tiger
Presented by

Syed Mahmudul Huq
Chairman
Bangladesh Shrimp and Fish Foundation

and

Nitya Ranjan Biswas
Team Leader, BSFF Project on Aquaculture Regulatory Framework &
Former Addl. DG, Department of Fisheries, Bangladesh