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BANGLADESH TRADE ASSESSMENT: ENHANCING TRADE IN THE SOUTH AND SOUTHWEST

BUSINESS ENVIRONMENTS FOR AGILE MARKETS (BEAM)

January 2013

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ABBREVIATIONS

ADB	Asian Development Bank
AEO	Authorized Economic Operator
AFL-CIO	American Federation of Labor and the Congress of Industrial Organizations
ACT	Agriculture Commodity Trade (project)
APTA	Asia Pacific Trade Agreement
ASYCUDA	Automated System for Customs Data (UNCTAD)
BAB	Bangladesh Accreditation Board
BARI	Bangladesh Agricultural Research Institute
BB	Bangladesh Bank
BBS	Bangladesh Bureau of Statistics
BCCSAP	Bangladesh Climate Change Strategy and Action Plan
BDT	Bangladeshi Taka
BEST	Better Fisheries Quality
BFFEA	Bangladesh Frozen Foods Exporters Association
BG	Broad Gauge
BIID	Bangladesh Institute of ICT Development
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
BJMC	Bangladesh Jute Mills Corporation
BJRI	Bangladesh Jute Research Institute
BIWTA	Bangladesh Inland Water Transport Authority
BLPA	Bangladesh Land Port Authority
BQSP	Bangladesh Quality Support Programme (EU)
BR	Bangladesh Railway
BRAC	Building Resources Across Communities (formerly Bangladesh Rural Advancement Committee)

BRDB	Bangladesh Rural Development Board
BSFF	Bangladesh Shrimp and Fish Foundation
BSIC	Bangladesh Standard Industrial Classification
BSTI	Bangladesh Standards and Testing Institution
CAA	Civil Aviation Authority
CDCS	Country Development and Cooperation Strategy
CFC	Common Fund for Commodities
CFS	Country Freight Service
CKW	Community Knowledge Worker (Grameen Foundation)
DCA	Development Credit Authority (USAID)
DFID	Department for International Development (UK)
DFQF	Duty-free Quota-free
DB	Doing Business Report (World Bank)
EBA	Everything But Arms Initiative
ECE	Electronic Commodity Exchange
EPB	Export Promotion Bureau
EU	European Union
FAO	Food and Agriculture Organization
FIQC	Fish Inspection and Quality Control
FIS	Farmer Information System
FTF	Feed the Future (USAID)
GAP	Good Agricultural Practices
GATT	General Agreement on Trade in Services
GDP	Gross Domestic Product
GEP	Guaranteed Express Service
GNI	Gross National Income

GNP	Gross National Product
GOB	Government of Bangladesh
GSP	Generalized System of Preferences (GATT/WTO)
HACCP	Hazard Analysis and Critical Control Points
HIES	Household Income and Expenditure Survey
HS	Harmonized Commodity Description and Coding System
Hortex	Horticultural Export Development Foundation
HYV	High Yielding Variety
ICD	Inland Container Depot
ILAB	Bureau of International Labor Affairs
IMTP	Integrated Multi-modal Transport Policy
IPM	Integrated Pest Management
IPCC	Intergovernmental Panel on Climate Change
ITC	International Trade Center
IWTA	Inland Water Transport Authority
JDP	Jute Diversified Product
LDC	Least Developed Country
MFN	Most Favored Nation
MOU	Memorandum of Understanding
MPA	Mongla Port Authority
MT	Metric Ton (1,000 kilograms)
NABCB	National Accreditation Board for Certification Bodies (India)
NAMA	Non-Agricultural Market Access
NEC	National Economic Council
nd	No date
NGO	Non-governmental organization

NLTP	National Land Transport Policy
NORAD	Norwegian Agency for Development Cooperation
NTB	Non-Tariff Barrier
PL	Post Larvae
PPP	Public-private partnership
PRICE	Poverty Reduction by Increasing Competitiveness (USAID project)
PRSP	Poverty Reduction Strategy Paper
PSI	Pre-Shipment Inspection
PTA	Preferential Trade Arrangement
RASFF	Rapid Alert System for Food and Feed (EU)
RCA	Revealed Comparative Advantage
RHD	Roads and Highways Department
RMD	Road Master Plan
RMG	Ready-made Garments
SAARC	South Asian Association for Regional Cooperation
SAFTA	South Asia Free Trade Agreement
SASEC	South Asia Sub-regional Economic Cooperation
SEZ	Special Economic Zone
SME	Small and medium-sized enterprise
SPS	Sanitary and Phytosanitary
SSW	South and Southwest Bangladesh
STR	Strategic Transport Plan
SW	Single Window
TAR	Trans Asian Railway
T&L	Transportation and Logistics
TPR	Trade Policy Review (WTO)

UNCTAD	UN Conference on Trade and Development
USAID	US Agency for International Development
USD	United States Dollar
USTR	US Trade Representative
VAT	Value Added Tax
VC	Value Chain
WCO	World Customs Organization
WTO	World Trade Organization

FOREWORD

USAID/Bangladesh requested that CARANA Corporation undertake an assessment under the Business Environments for Agile Markets (BEAM) task order led by USAID's Bureau for Economic Growth, Education and Environment (E3). The assignment consisted of examining USAID's potential to increase regional and global trade in the South/Southwest region of Bangladesh. The assessment team was asked to analyze key constraints and identify illustrative and cost-effective interventions that would contribute to the income generation and market access objectives of the Feed the Future (FTF) program.

The objective of this study was to determine the potential for promoting regional and global trade linkages with the South/Southwest of the country, which is considered by USAID to be the FTF region. Focus questions included:

- What existing food and non-food agricultural products are in a strong position to enter or expand into international markets?
- What are the key constraints to trade development in the FTF region?
- How can USAID improve trade in the FTF region?
- How can the effectiveness of Customs be strengthened, especially in relation to the time it takes to export agricultural goods from the FTF region?
- What are the limits to the logistics systems in the FTF region and how can they be addressed cost-effectively?

The CARANA assessment team consisted of Andy Cook (team leader), Kent Ford, Nimish Jhaveri and Anne Szender. Staff of USAID/Bangladesh (Aniruddah Roy and Beth Hain), as well as Nathan Martinez (USAID/E3), joined the CARANA team for most meetings in Bangladesh, including travel and meetings within the FTF region. The team also received support from Khurshid Alam of the Bangladeshi firm Insights and Ideas. Two additional senior economists from CARANA assisted with the analysis and drafting of this report, Peter Boone and Erin Endean, Chief of Party of the BEAM project.

Following a review of relevant literature, the assessment team visited Bangladesh from 27 August to 14 September 2012. The mission took place in three consecutive phases:

1. Initial information gathering at government ministries in Dhaka (August 27–September 1).

2. Fieldwork in the South/Southwest to examine the potential and constraints to the expansion of the five value chains, as well as cross-cutting transportation and logistics issues affecting regional exports (September 1–September 9).[1]

3. Follow-up meetings in Dhaka to gather additional information, refine the field analysis, and produce a final assessment. (September 10–September 14).

Following completion of the field mission, team members have done additional documentary research, incorporating information that was publicly available as of December 1, 2012—including significant new documents from the World Trade Organization and the Asian Development Bank.

[1] The assessment team examined the trade corridors to Kolkata, India, a northern corridor via the land ports of Benapole and Petrapole. It also evaluated a southern corridor via the proposed land ports of Bhomra and Ghojadanga, in addition to the export potential of Mongla Port.

In all, the CARANA team met with over 60 organizations in Bangladesh. The broad range of interviewees included current and past government officials and policymakers, economists, industry organizations, private businesses, university professors, women and youth groups, USAID implementing partners, and other donors.

The resulting study examines ways in which export growth of food and non-food agricultural products from the FTF region can contribute to income generation and job creation. Broad-based growth, including benefits to the rural poor, women and young people, are ultimately important for food security.

The authors would like to thank the USAID/Bangladesh and USAID/E3 colleagues, particularly Beth Hain, Aniruddah Roy and Nathan Martinez, for their excellent guidance and technical support.

EXECUTIVE SUMMARY

USAID/Bangladesh requested that CARANA Corporation undertake an assessment under the Business Environments for Agile Markets (BEAM) task order led by USAID's Bureau for Economic Growth, Education and Environment (E3). An assessment team of four individuals from CARANA (Andy Cook, Kent Ford, Nimish Jhaveri and Anne Szender) conducted a field mission in August-September 2012, joined by USAID staff (Beth Hain, Aniruddah Roy and Nathan Martinez) and a senior Bangladeshi consultant (Khurshid Alam).

USAID engaged CARANA to assess the potential for promoting regional and global trade from the largely agricultural South/Southwest (SSW) region of Bangladesh. The assessment team was tasked with identifying strong prospects for export growth from the region based on productive capacity and export market demand, as well as competition considerations. It was also tasked with analyzing the key obstacles to regional export growth and with outlining potential cost-effective interventions that could contribute to the income generation and market access objectives of the USAID Feed the Future (FTF) program, which centers on this geographic area.

This report summarizes major development opportunities and challenges for five value chains that show strong potential for income generation through exports, which in turn would help increase food security in this region. The report also examines cross-cutting impediments to exports from the SSW, particularly those related to road transport and to Customs and other border procedures, including sanitary and phytosanitary standards. Throughout the discussion, the team has made programmatic recommendations for activities to improve vertical and horizontal linkages between value chain actors from farm to market, including farmers, aggregators, local traders, processors and transportation providers.

Bangladesh's Vision 2021 outlines the country's goal to become a middle-income economy by 2021, its 50th anniversary of independence. To achieve this, the country will require real average annual GDP growth of at least 8%, rising to 10% by 2017. Economic diversification away from the textile/apparel sector, which currently represents 90% of Bangladesh's export earnings, is an important aspect of Vision 2021. In addition, increased income from export earnings can play a critical role in food security in Bangladesh, at both the national and household levels. USAID is committed to bolstering this ambitious vision, with its FTF program in the SSW region serving as its primary support instrument.

The assessment team surveyed the current structure of trade in Bangladesh. The analysis revealed that apart from readymade garments (RMG), other export sectors have grown modestly in the last decade. Frozen food and shrimp, together with leather and jute products, have stagnated or declined as a share of merchandise exports. Moreover, in a country where agriculture accounts for 24% of GDP, exports of agricultural products accounted for only 7% of total exports. Agricultural exports therefore have significant potential to act as an engine of growth for the poor and displaced, particularly in the SSW where poverty rates are higher than in the East.

While Bangladesh's structure of global trade is dominated by apparel exports to the United States and European Union, its regional trading pattern is very different. Within South Asia, the country's most important trading partner is India. However, despite being largely encircled by that country, available data show that only 2% of Bangladesh's exports went to India in 2011. This suggests considerable potential to increase the volume of exports destined for the Indian market. Today, Bangladeshi exports to India consist principally of jute, animals and animal products, and vegetable products. On the import side, India was the second-largest supplier of Bangladeshi imports in 2011. Bangladesh imported mainly

textiles, vegetables and foodstuffs. From 2002 to 2011, Bangladesh's imports from India increased at an average annual rate of 14%. Over the same period, Bangladeshi exports to India grew by an average annual rate of 30%. Despite the strong export growth, Bangladesh still maintains a substantial trade deficit with its neighbor.

EXPORT PROSPECTS FOR VALUE CHAINS IN THE SSW

Building on USAID and Government of Bangladesh (GOB) development priorities as were identified in a substantial review of the literature, the assessment team evaluated a list of more than one dozen potential value chains (VCs) in the SSW region utilizing the following criteria:

- Consistency with USAID and GOB priorities for the agricultural and rural sectors;
- Ability to contribute to income generation and poverty reduction;
- Employment generation potential;
- Ability to supply foreign markets and raise export earnings;
- Prospects for building on some existing industry foundation or critical mass.

This process led the assessment team to focus on an in-depth analysis and ranking of five potential VCs: cut flowers, vegetables, shrimp and prawn, jute and jute products, and coconut products—especially coir-based goods.

Two of these (jute and shrimp/prawns) are well-established agricultural export VCs in the SSW. The region has been exporting jute to global markets since before independence. Aquaculture exports, particularly shrimp, have become significant in the last two decades. These two VCs already have the capacity to supply foreign markets and expand further in south and southwestern Bangladesh.

The assessment team also considered prospects for three less historically important export VCs from the Feed the Future (FTF) zone. Two of these are horticultural—fresh vegetables and cut flowers. For decades, Bangladesh has exported small quantities of vegetables by air to diaspora communities worldwide. This trade has grown with the expansion of available cargo space in passenger flights from Dhaka airport. Meanwhile, cut flowers are a non-traditional export for high-end markets in developed countries.

The fifth VC is coir-based goods, a by-product of coconut oil production. India has shown considerable success in adding value to coir-based products, but Bangladesh is far from fully exploiting this opportunity. None of these five agricultural products are predominantly plantation-grown. In addition, a large proportion of smallholder farmers in south and southwestern Bangladesh already participate in export VCs for these products.

To prioritize from among these five sectors, we developed a data-intensive analytical methodology for examining foreign demand for these products and the ability of Bangladeshi producers to expand output to meet market requirements. Our methodology was based on a total of 14 indicators (7 for "demand" and 7 for "supply") for each of the five value chains. We examined trends in global demand for imports of these products; Bangladesh's position in the global marketplace, including its key export markets; and evidence of Bangladeshi producers' comparative advantage in producing these products for exports, including whether the country's market share is growing or decreasing, and relative price information where available.

Our methodology produced the following ranking of export prospects by value chain:

- **Shrimp/Prawns** and **Jute** rank highest in terms of their export performance potential. They are both well-established agricultural export VCs in the SSW region. These VCs already have the capacity to supply foreign markets and further expand production in the SSW.
- **Fresh Vegetables** are ranked as having medium potential in terms of export performance. For decades, Bangladesh has exported small quantities of vegetables by air to diaspora communities worldwide. It is also supplying domestic markets on a reasonable scale.
- **Cut Flowers** and **Coir** are evaluated to have nascent export growth potential. They are non-traditional exports that have not yet penetrated export markets on a substantial scale. However, global demand for both products is strong and Bangladeshi producers should be able to make inroads in foreign markets.

Each value chain was evaluated and ranked against fourteen criteria, further explained in Annex. Figure 1 summarizes our findings, and figures 2-6 provide spider web charts for each of the five sectors, depicting performance and/or opportunity in the seven indicators comprising our methodology for assessing "demand" factors, and our seven indicators used to assess Bangladeshi producers' ability to expand supply or processing capacity. In our methodology, each criterion was ranked on a five point scale with (-1) representing deficiency or deteriorating performance and +2 representing extraordinarily strong performance or prospects.

Figure 1 – Strategic Potential of Targeted Value Chains.

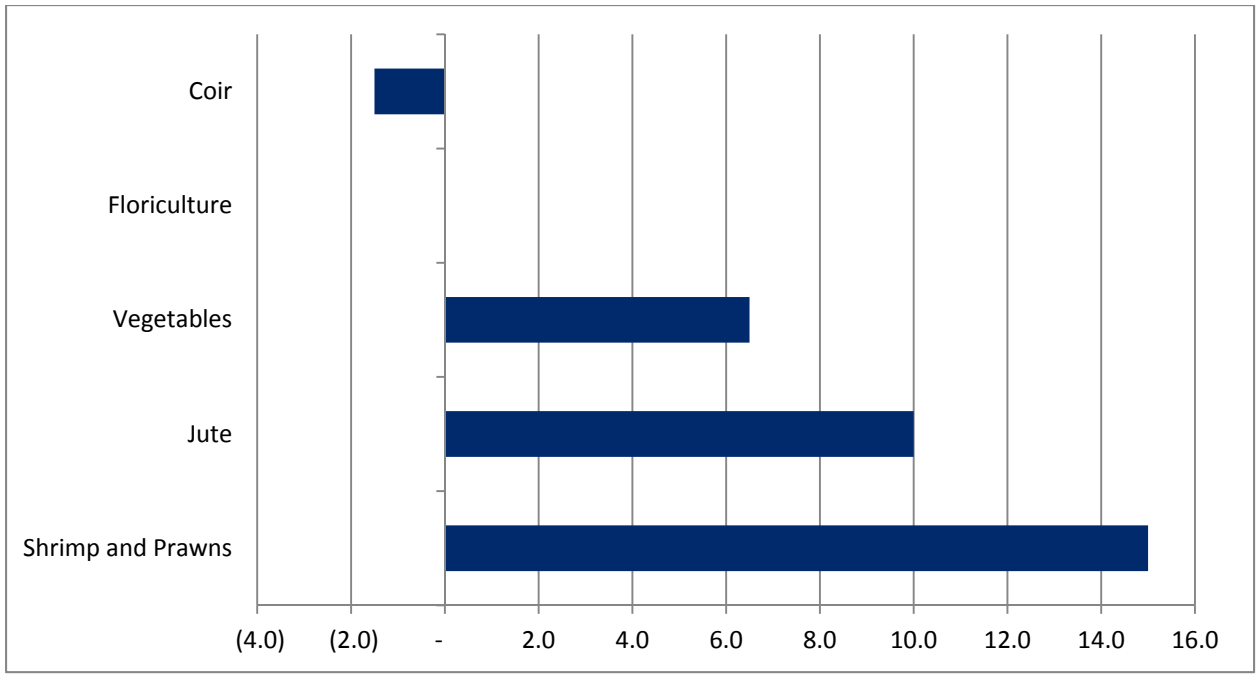


Figure 2 – Shrimp and Prawns

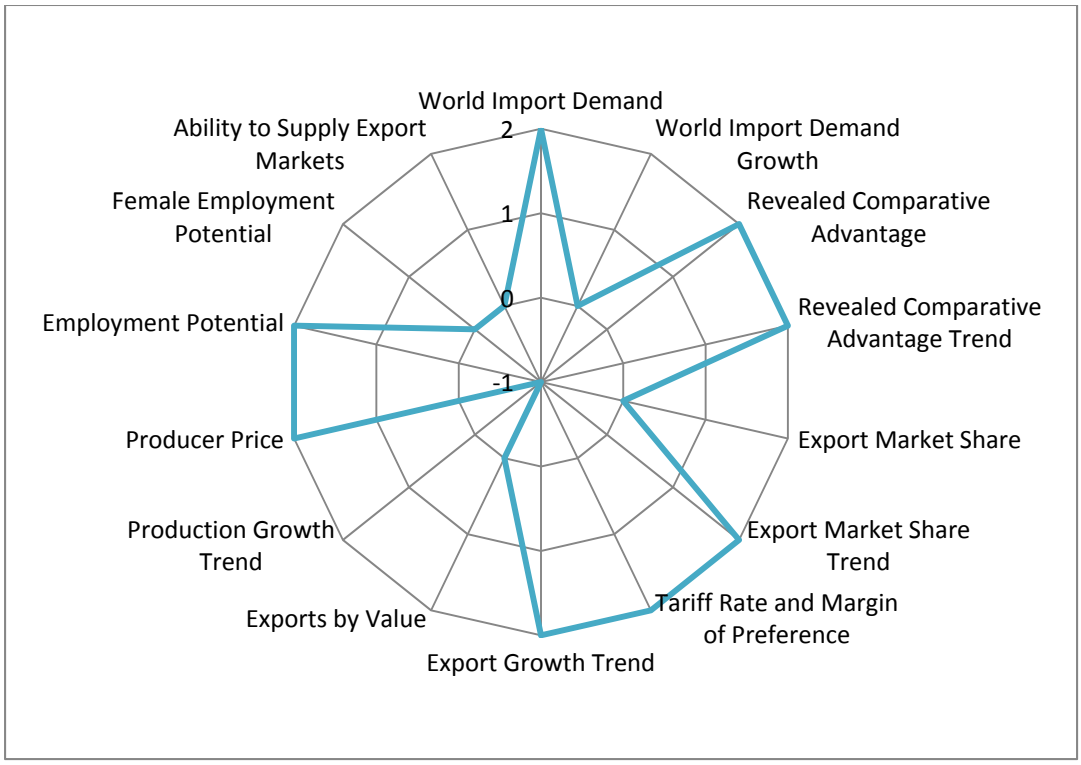


Figure 3 - Jute

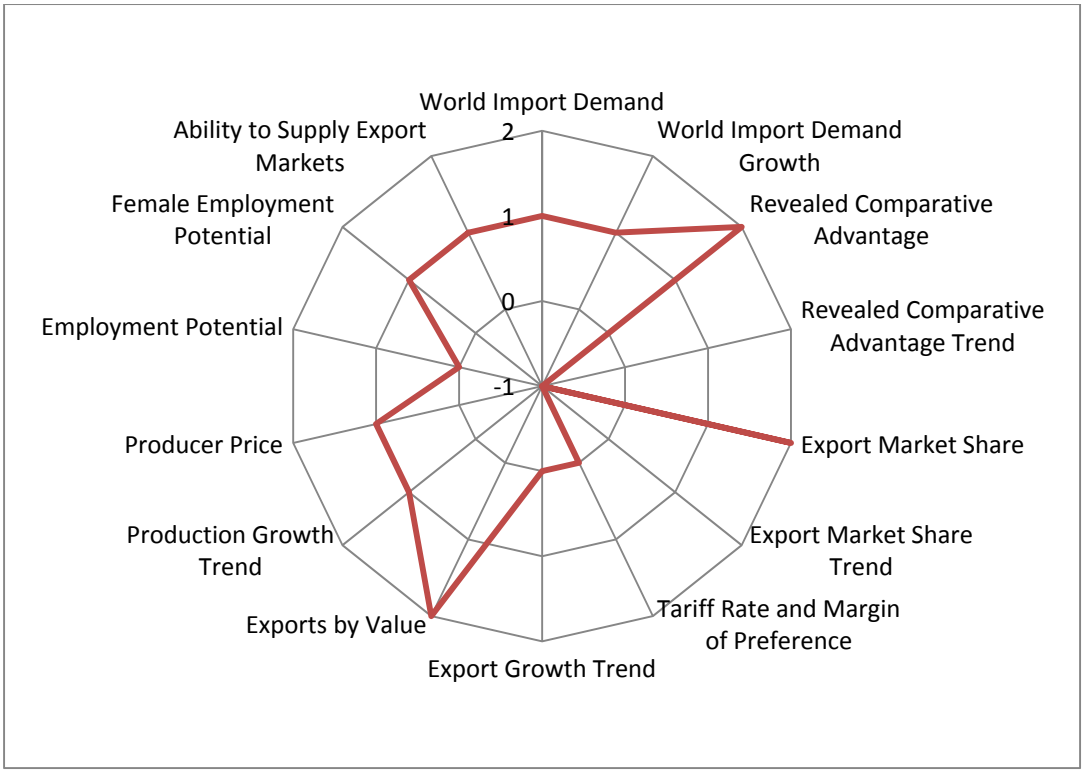


Figure 4 - Vegetables

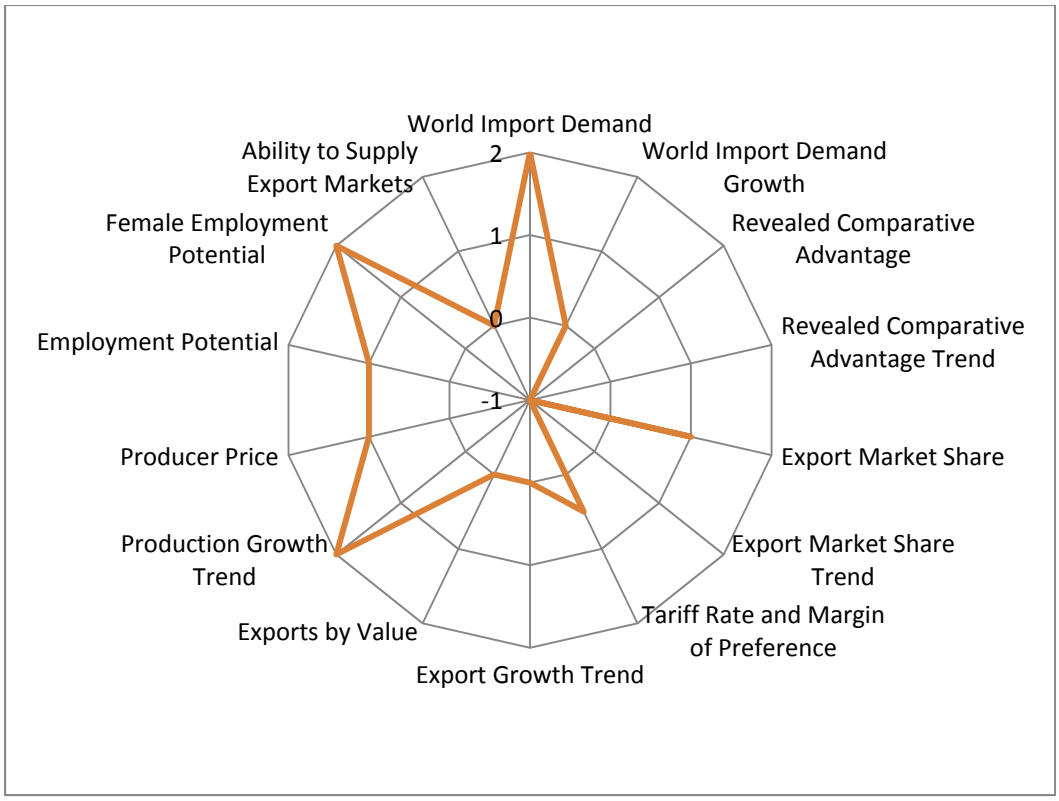


Figure 5 - Coir

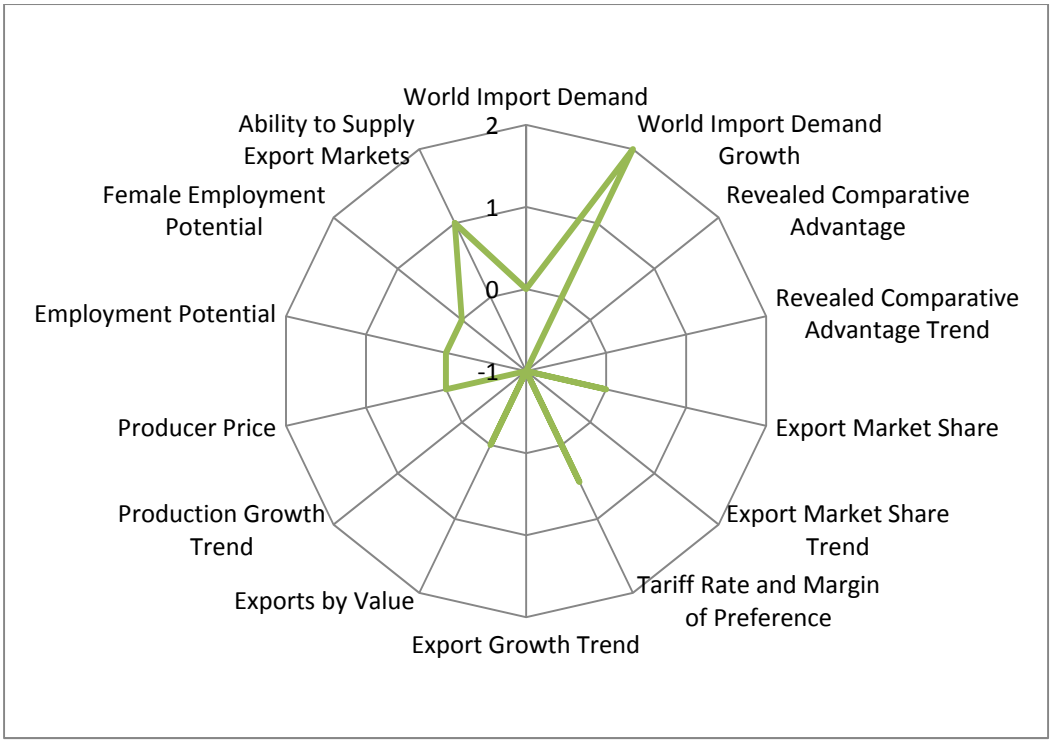
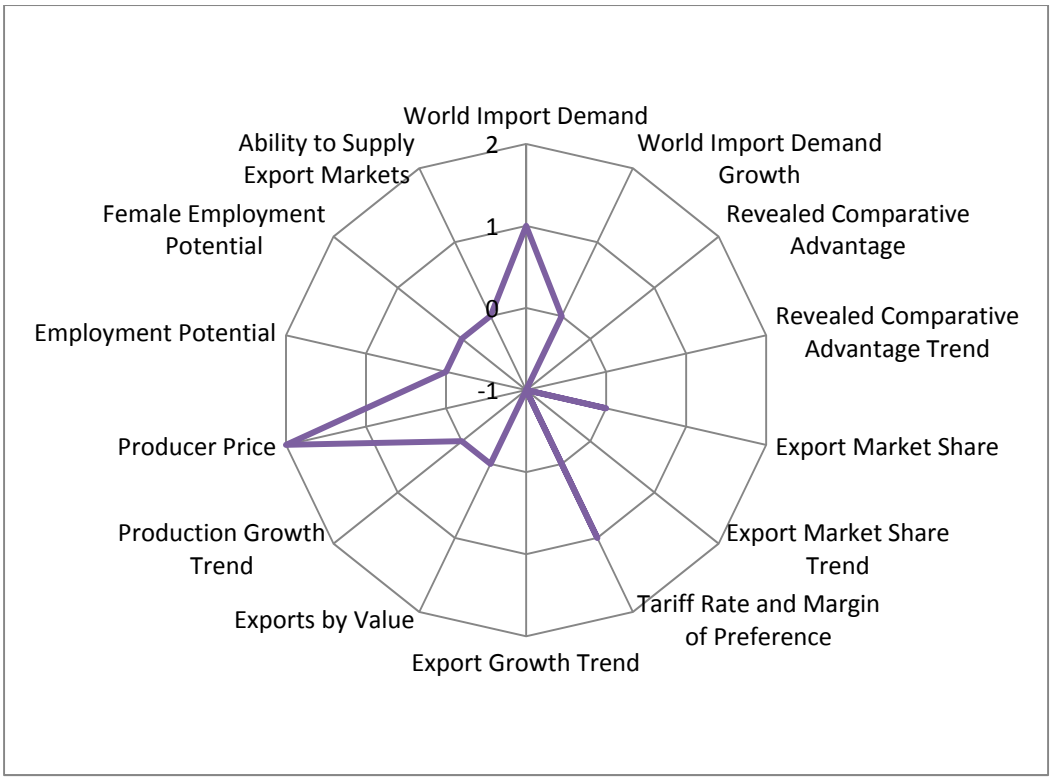


Figure 6 - Floriculture



CROSS-CUTTING IMPEDIMENTS TO EXPORTS FROM THE SSW REGION

Available evidence suggests that Customs clearance processes, regulations on cross-border trucking, testing for standards enforcement and governance issues were shown to have a greater deleterious impact on the movement of traded goods from the SSW region to Kolkata than the condition of physical infrastructure such as roads and bridges Border clearance delays cause the perishable goods to deteriorate or spoil and thereby erode cost competitiveness for Bangladeshi exports. Trade delays are assessed to have a greater impact on cost competitiveness than high import duties on Bangladeshi agricultural exports.

Obstacles to an efficient trucking industry include the pervasive use of small trucks, which cannot carry containers and which are of limited efficiency, but which are required for the narrower sections of the corridor. Also, informal sector truckers in both Bangladesh and India routinely overload their trucks, sometimes because freight intermediaries require them to accept illegal loads. Overloading damages infrastructure and also necessitates "facilitation payments" by truckers at weigh stations. Finally, Bangladesh's freight brokerage system typically gives payment of 10% of shipping charges to the association who arranges for the Bangladeshi exporter to contract for shipment. This compares to an international norm of 1–3%.

Road connections to Mongla Port are poor and Bangladesh's rail network currently stops at Khulna. Air transport of perishables, such as cut flowers, is limited. A major constraint is the fact that the national air carrier (Biman Bangladesh Airlines) does not have dedicated cargo planes; it uses hold space in

passenger planes. Outbound shipments are thus an uncertain proposition for lower-value but perishable goods such as cut flowers. Cold chain storage facilities are needed.

Apart from physical infrastructure constraints, there are other impediments to growth of exports from the SSW region. For example, in two of Bangladesh's top five export markets for agricultural goods (Nigeria and China), Bangladeshi goods face extremely high tariffs and have little or no margin of preference against other suppliers.

There is limited technical and market information available to agricultural producers and SMEs in the South and Southwest Region. With high farmer-to-agent ratios, it is difficult to relay key information to farmers and limited market information available for farmers when they sell crops. Farmers must often sell to the nearest market regardless of prices offered, leaving them with little bargaining power.

RECOMMENDATIONS

Throughout the report, the assessment team has offered recommendations for both programmatic activities and additional analysis or research corresponding to specific issues discussed in individual chapters. Here and in the final chapter, the assessment team has clustered a set of recommendations that, if pursued in an integrated manner, would provide synergies, and magnify effectiveness and export impact. These clusters are:

1. Value-chain specific initiatives designed to accelerate exports of a specific product or products;
2. Cross-cutting initiatives addressing barriers to exports from the SSW region; and
3. Initiatives focused on stimulating Bangladesh-India cross-border trade.

VALUE-CHAIN EXPORT DEVELOPMENT INITIATIVES

The initiatives proposed in this cluster seek to expand food and non-food agricultural exports from the targeted VCs in the SSW region to global markets. The assessment team suggests that USAID work on a set of VC development initiatives, prioritized according to the team's ranking of export potential for each of the five value chains. Priority recommendations are summarized in the table below.

CURRENT SITUATION	INTERVENTION	POTENTIAL IMPLEMENTING PARTNERS
SHRIMP/PRAWNS		
Most shrimp and fish processors do not know the source of their raw material and are often unaware of chemicals added to the product. This lack of supply chain traceability limits access to international markets for Bangladeshi producers.	Introduce a pilot supply chain traceability system for shrimp/prawns that documents where each kilo of product came from, how it was processed and which chemicals or pesticides were used, as well as when the product was harvested and processed.[2]	Ministry of Fisheries and Livestock, Bangladesh Frozen Food Exporters Association (BFFEA) and the Bangladesh Shrimp & Fish Foundation.

[2] This program can subsequently be scaled up to an industry-wide standards program if there is support from donors, government agencies and industry groups.

Weak implementation and enforcement of Hazard Analysis and Critical Control Points (HACCP) and Sanitary and Phytosanitary Standards (SPS).	Build industry awareness to promote adherence to health and safety standards and create a competitive advantage for Bangladeshi aquaculture.	Ministry of Fisheries and Livestock, BFFEA and the Bangladesh Shrimp & Fish Foundation.
The industry confronts a potential setback if GSP is withdrawn due to labor rights violations in, among other industries, shrimp farming and processing.	Work with the Worker Rights Consortium to establish a model program of labor rights that would be adopted by shrimp processing plants which would include a living wage, the right to organize, and offer health and safety benefits, while guaranteeing that there is no child labor.	BFFEA, Ministry of Fisheries and Livestock, Bangladesh Shrimp & Fish Foundation, Worker Rights Consortium
JUTE		
Farmers typically lack knowledge about the range of jute grades and market prices.	Extension services and export-led firms improve producer knowledge of seed quality, retting technology, and jute grading and pricing.	Department of Agricultural Extension, Bangladesh Jute Research Institute and private firms.
Low level of domestic production of jute-diversified products (JDP).	Programs to support domestic production of value-added products and branding of Bangladeshi products.	Jute Diversification Promotion Center, Bangladesh Jute Research Institute, Export Promotion Bureau and the Bangladesh Jute Goods Association.
FRESH VEGETABLES		
Inadequate cargo terminals, storage infrastructure and cold-chain facilities at key points along the value chain.	Public Private Partnership to develop air cargo facilities and integrated cold chains in Jessore and Dhaka.	Private investors, Ministry of Civil Aviation and Tourism, and Ministry of Commerce.
Absence of certified testing laboratories and lack of conformity to international standards such as GlobalGap.	Promote private investment in a certified laboratory, as well as the high quality standards of GlobalGap certification and compliance.	Bangladesh Standards and Testing Institution (BSTI), Ministry of Industries and Hortex Foundation.
Inability of international buyers to access large volumes of vegetables that meet strict quality and delivery requirements.	Promote firm-smallholder value chain linkages to transfer technology and know-how, and develop longer-term relationships through contract farming.	Hortex Foundation and the Federation of Bangladesh Chambers of Commerce and Industry.
CUT FLOWERS		
Low production yields.	Introduce new varieties adapted to lower water use and saline conditions. Improve extension services to farmers.	Bangladesh Agricultural Research Institute (BARI), GOB agricultural colleges, GOB extension agents and commercial partners.

Unreliable air transportation to export markets.	Develop MOUs and contracts with air cargo companies to confirm export air cargo space availability prior to harvesting.	Flower grower associations, commercial airlines and logistics companies.
COIR		
Absence of institutions to promote the market development of the coconut sector.	Create a private-sector driven industry organization for the coconut sector.	Federation of Bangladesh Chambers of Commerce and Industry. Draw on the jute production experience of Creation Private Ltd.
Inability of coir-producing firms to find buyers for coir dust by-products.	Establish and build market linkages, nationally and internationally.	Export Promotion Bureau and the Chamber of Commerce.

CROSS-CUTTING INITIATIVES TO FOSTER EXPORTS FROM THE SSW REGION

This cluster of recommendations focuses on the cross-cutting initiatives that are needed to support the targeted export value chains from the SSW region. USAID has had considerable success worldwide in implementing programs that provide cross-cutting (or horizontal) services in support of vertical value-chain development initiatives.

The logic of this integrated value-chain approach is based on the premise that specific end-market needs drive new investment, upgrades and improved processes within each of the targeted VCs. In order to enable VC producers and intermediaries to align their supply responses to market requirements, programs also require a number of broader horizontal support activities. The majority of these activities cut across the targeted VCs in order to achieve economies of scale in their delivery. Some differentiated approaches that are specific to each VC may also be necessary.

The types of cross-cutting initiatives needed by the export value chains from SSW Bangladesh include: trade policy reforms; improvements in transportation infrastructure, such as upgrades to cold-storage facilities and a new air cargo terminal at Dhaka Shahjalal Airport; enhancements to Mongla Port's efficiency to increase the global reach of the shrimp, jute and coir value chains; and a pilot mobile technology activity that would improve the quality of information available to producers and those adding value in the market chain.

In addition to these initiatives, some of the VC-specific pilot initiatives summarized in Cluster 1 above (cold-chain development, quality standards and traceability), if successful, could be scaled up and broadened to become national cross-cutting programs.

CURRENT SITUATION	INTERVENTION	POTENTIAL IMPLEMENTING PARTNERS
AIR CARGO INFRASTRUCTURE		
Lack of an efficient air-cargo facility at Dhaka's Shahjalal Airport to take advantage of the expansion of exports by air.	Facilitate an alliance to undertake studies and negotiations with the goal of building and operating an air-cargo facility at (or near) Dhaka's Shahjalal Airport and charter cargo planes on a predictable calendar.	Export Promotion Bureau, Civil Aviation Authority, Biman Bangladesh Airlines and the Federation of Bangladesh Chambers of Commerce and Industry.

MONGLA PORT		
Uncertainty about the timing of the various planned port improvements.	Examine the ADB feasibility study (in progress as of September 2012) together with stakeholders to identify unfunded elements with potential to increase exports from the SSW.	ADB, Mongla Port Authority (MPA), Customs, freight forwarders and exporters of shrimp, fish and jute.
MOBILE TECHNOLOGY		
Bangladeshi farmers of export commodities often incur losses because of insufficient price and market information that would allow them to increase sales and profitability.	Launch a pilot project in a specific district of the SSW that addresses key information gaps through mobile technology.	ACT project.

BANGLADESH-INDIA CROSS-BORDER INITIATIVES

Given the vast potential to increase the relatively modest level of bilateral trade between Bangladesh and India, this report identified a number of Bangladesh-India specific trade and transportation issues and constraints that should be tackled, preferably through a bilateral cooperation program between the two countries. Several examples include: transportation corridor governance issues; transportation corridor infrastructure challenges; transportation policy issues; Customs and border issues; and technical standards and negotiations.

Any investments that USAID/Bangladesh might make in speeding up land-border crossings with India and reducing transportation costs will need to consider what happens on the other side of the border. While there is an urgent need to address the binding constraints on the Bangladeshi side, there is also a need to confirm whether weak links are also being addressed on the Indian side. The ADB is supporting the modernization and reform of Bangladeshi Customs, including the land port of Benapole. However, it is not assisting the Indian Customs authorities at Petrapole. Thus, ADB support for Customs reform and modernization in Bangladesh could have a substantially greater impact on the speed of Bangladeshi import clearance procedures for Indian goods than on Bangladesh's ability to stimulate exports from the SSW region to India. Only through expedited Indian import clearance processes will perishable Bangladeshi exports ultimately be able to meet the demands of Indian buyers in terms of delivery time, cost, quality and freshness.

There is undoubtedly work to be done on the two Dhaka-Kolkata corridors. But without a USAID regional project, it might make sense to work jointly with ADB. For example, ADB may be able to find out if longer border opening hours proposed in Bangladesh would meet with resistance from Indian counterparts. With support from donors working in India for a regional initiative, USAID might be able to replicate the advances and successes undertaken with ADB support at Benapole at the Indian port of Petrapole. Another "sister city" project could be undertaken at Bhomra and Ghojandanga.

USAID has significant experience in developing information systems to monitor inefficiencies along trade corridors. It also knows how to use the output from these systems as the basis for civil-society advocacy to publicize and reduce bottlenecks. Such a system might focus on border crossings or on a complete corridor. Any integrated activity between US Embassies and other donors in Bangladesh and India on a specific corridor should be designed as the first steps in such a system.

Given their critical impact on market access in India, issues such as sanitary and phytosanitary (SPS) inspections and product quality must also be addressed. These issues present a market access barrier that prevents small farmers and processors from taking advantage of market opportunities.

CURRENT SITUATION	INTERVENTION	POTENTIAL IMPLEMENTING PARTNERS
ROADS		
Traffic congestion at land borders without evidence that would allow for the proposal of viable solutions.	Document the length of processes at the borders to establish the causal factors that generate waste and inefficiencies. This could lead to a periodic publishing of statistics on delays and examples of rent-seeking behavior along the corridor, particularly at the Benapole-Petrapole border.	ADB, Customs and other border services, Bangladesh Land Port Authority, private sector, truckers' associations and drivers' unions.
Overloaded trucks damage the roads and bridges on the two corridors between Kolkata and Dhaka.	Develop practical protocols to conduct a risk-managed sample of trucks weighed at various points along the corridor and enforce fines and offloading of surplus cargo.	Ministry of Communication, Roads & Highways Department, truckers' associations and truck-drivers' unions.
Road-side corruption on the Bangladeshi and Indian sides of the border leads to excess road transportation costs and time delays. These serve as effective taxes on domestic commerce and international trade.	Work with the Ministry of Communication, truckers' associations and export traders to document the frequency and financial impact of roadside hassles and corruption. This analysis could eventually be broadened to include the entire Dhaka-Kolkata road corridor.	Ministry of Communication, Roads & Highways Department, truckers' associations and truck-drivers' unions.
CUSTOMS		
ADB is undertaking a project at Benapole to improve the efficiency of port and customs procedures. But it is not funding work at Petrapole, on the Indian side of the border.	Facilitate a replication of the efficient parts of the ADB project at Bhomra-Ghojadanga.	ADB, Customs and other border services, and the Bangladesh Land Port Authority.
	Support work (via donors in India) in Petrapole and Ghojadanga to expedite border clearance procedures affecting priority Bangladeshi exports from the SSW.	Donors working in India, ADB, Customs and other border services, and local authorities in India (Petrapole and Ghojadanga).
Limited border opening hours contribute to traffic congestion, especially trucks loaded with export goods.	Analyze the costs and benefits of extending the opening hours at border posts, including a 24/7 schedule.	Customs and Ministry of Agriculture, and Land Port Authorities from both countries.
STANDARDS		
Absence of mutual recognition of SPS certification with India applied efficiently to facilitate swift border crossing.	Facilitate the negotiation of an SPS agreement to accelerate exports of agricultural products, particularly from Bangladesh to India.	Ministries of Agriculture of both countries, Commercial Attaché of the Indian High Commission

Lack of targeting of large shipments of fresh agricultural products to high-value world markets from the SSW.	Identify companies in the SSW that might competitively supply developed-economy supermarkets with fresh produce. Design a program to facilitate their entry into these markets, possibly in collaboration with PRAN.	Hortex Foundation, PRAN, Ministry of Agriculture, and Export Promotion Bureau.

I. INTRODUCTION AND CONTEXT

Bangladesh's Vision 2021 outlines the country's goal to become a middle-income economy by 2021, the country's 50th anniversary of independence. To achieve this, Bangladesh will require real annual GDP growth of at least 8%.

USAID is committed to supporting this ambitious vision. Its *Bangladesh Country Development and Cooperation Strategy FY2011–FY2016* (CDCS) is responsive to and based on the government's Sixth Five-Year Plan for 2011–2016. The USAID CDCS framework includes, among others, Development Objective 2: availability, access and utilization of domestically produced and nutritious foods increased. Three intermediate results from the pillars of this strategy are:

2.1 Sustainably increased agricultural productivity,

2.2 Improved access through market systems, and

2.3 Improved nutrition and dietary diversity.

The current study, *Bangladesh Trade Assessment: Enhancing Trade in the South and Southwest*, will contribute to intermediate result 2.2.

Feed the Future (FTF) is the US Government's global hunger and food-security initiative to support country-driven approaches that reduce structural hunger and poverty. The FTF region of Bangladesh comprises the south and southwest, an area with a population of about 30 million and great potential for agricultural diversification and the mitigation of climate-related food insecurity.

A key part of achieving intermediate result 2.2 is tackling the inability of poor people to buy food. Increasing incomes is therefore important to food security. Page 12 of USAID's Bangladesh country development strategy FY2011–FY2016 states:

> "A high rate of productive employment generation is essential for Bangladesh to achieve sustainable, broad-based economic growth and the household income levels required for food security….Three overriding constraints face the agriculture and non-agricultural sectors of the economy: (1) poor governance; (2) poor state of infrastructure; and (3) a lack of skilled labor, including technical and middle management expertise. The Mission will address these issues through targeted interventions to increase agricultural productivity, increase incomes and access to food…."

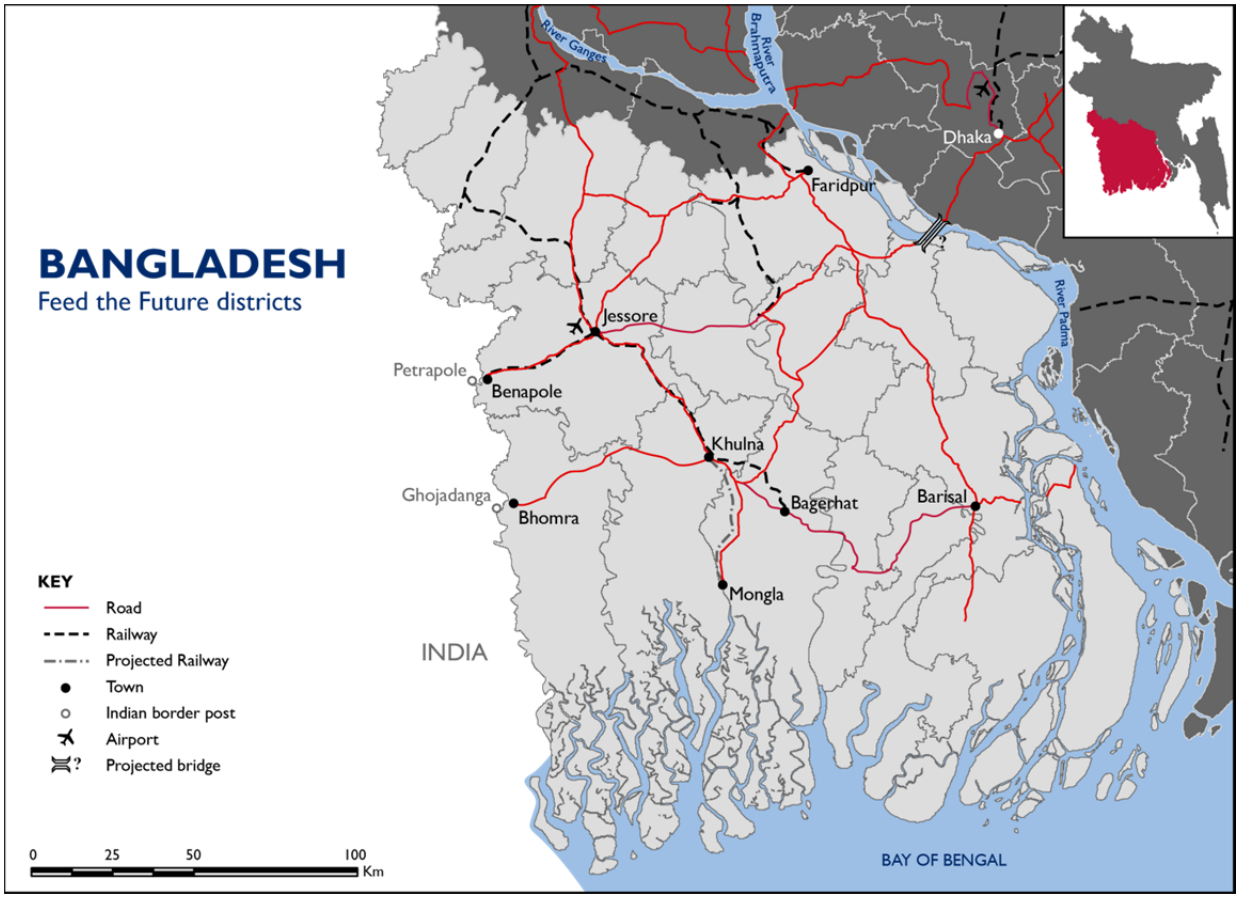
Trade-based food security is thus a common goal for Vision 2021, the national development strategy, the FTF initiative and USAID's Bangladesh development strategy. The idea is to increase production and commercialization of agricultural commodities and value-added goods to generate higher incomes. As markets beyond Bangladesh offer higher demand, the study seeks to identify the best options for increasing value-added to agricultural commodities from the south and southwest by promoting exports.

SOUTH/SOUTHWEST BANGLADESH

Map 1 shows the FTF zone in south and southwest (SSW) Bangladesh. To the west, the frontier with India has long limited trade between the two countries. Although the situation is improving, the border still represents a barrier to accessing the Indian market. To the south, the Bay of Bengal, fringed by the environmentally critical, but agriculturally unproductive mangrove swamps known as the Sundarbans,

constitutes a natural barrier. Mongla is the only significant port linking the south and southwest to external markets. To the east, the Padma River, crossable only by ferry, separates the south and southwest from the economically more vibrant center and southeast of the country. Only in the north does the region have relatively easy access to adjacent markets.[3]

Map 1 – South and Southwest Bangladesh.



Khulna is the largest city in the region and an important commercial focus. Jessore, on a major road to India, is an energetic trading hub with the most important airport. Other cities of economic importance are Barisal, Bagerhat and Faridpur.

South and Southwest Bangladesh is flat, with about half the region lying at less than a meter above sea level. The land faces several major threats, particularly in the coastal areas, the most disaster-prone in the country. The salt-water loving Sundarban mangrove forests (a World Heritage Site) protect the population from tidal surges, but less against the impact of cyclones. The mangroves do not offer protection against the slowly rising sea levels caused by global warming. According to the Bangladesh Climate Change Strategy and Action Plan, global warming could displace 6–8 million people by 2050.[4]

[3]The road north from Mongla through Jessore to Paksey and Hitikamrul is part of Asian Highway 41, which continues to Dhaka. At Hatikamrul, this road meets Asian Highway 2, which continues further north through Bogra and Rangpur, crossing into India at Banglabandha in the extreme northwest. As part of a sub-continental plan to develop access to Mongla Port from India and Nepal, the rough road links north of Southwest Bangladesh are likely to be improved, possibly with funding from the Asian Development Bank (ADB). This will provide another axis for marketing agricultural products from Bangladesh's SSW and ultimately to export them to Nepal and central/northern India.

[4] Government of Bangladesh (GOB), Climate Change Strategy and Action Plan, 2008.

Water management policies have been compounded by problems associated with rising sea levels, particularly the increase in soil salinity that threatens agricultural productivity. Aquaculture is one response to this problem; salt-tolerant coconut production is another.

In 2010, agriculture employed 47% of Bangladeshis.[5] In the rural south and southwest, the proportion is thought to be more than 50%. Rice produced during the annual monsoon season dominates agriculture, but farmers generally produce at least one crop during other seasons via irrigation and flood-resistant techniques. Jute and vegetables are two such crops, with the recent addition of cut flowers.

Rural poverty in the SSW lies slightly above the national mean of 35.2%.[6] The 2010 Household Income and Expenditure Survey (HIES) puts the percentage of the rural population living below the poverty line at 39.2% in Barisal Division, 38.8% in Dhaka Division and 31% in Khulna Division.[7] Assuming that the figures for Dhaka and Khulna are good proxies for the parts of these divisions that are part of the FTF zone, we reach a mean of 34.9% of the population living in poverty—slightly below the national mean.[8]

RECENT TRADE AND ECONOMIC DEVELOPMENTS

For decades, and until its demise in January 2005, the global Multi-Fiber Arrangement (MFA) gave Bangladesh a unique opportunity to enter global textiles and clothing markets by restraining exports from leading world producers in China, India, Hong Kong and South Korea.[9] The substantial growth in Bangladesh's apparel exports has boosted the importance of trade in the Bangladeshi economy. In 2011, Bangladesh's trade as a percent of GDP reached 54%, just ahead of the South Asia average of 51% of GDP, and equal to that of India.

Apart from readymade garments (RMG), however, Bangladesh's other exports have grown more modestly. Frozen food and shrimp, together with leather and jute products, have stagnated or declined as a share of merchandise exports in recent years. Moreover, in a country where agriculture accounts for 24% of GDP[10], exports of agricultural commodities and agro-industrial goods account for only 7% of total exports.[11] Still, agriculture continues to employ more people than any other industry (see Table 1). It also has greater potential to act as an engine of growth for the poor and displaced, particularly in the SSW, where poverty rates are higher than in the East.

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[5] Bangladesh Bureau of Statistics (BBS), Statistical Yearbook 2010, Chapter 3, Labor and Manpower, Table 3.09: Employment by Major Sector of Employment.

[6] 2010 National Incidence of Poverty (Head Count Rate) for the Upper Poverty Line.

[7] GOB, BBS. *Report of the Household Income & Expenditure Survey 2010*, December 2011. http://www.bbs.gov.bd/PageWebMenuContent.aspx?MenuKey=320

[8] A similar calculation for combined rural and urban poverty did not seem appropriate because the Dhaka Division component seemed likely to contain a downward bias. In addition, the five Dhaka districts in the FTF zone were all significantly more rural than Dhaka Division as a whole due to the heavy influence of the capital.

[9] The MFA capped EU and US imports of textiles and garment exports from South Korea, Hong Kong, China and India. To capitalize on these quotas, Bangladesh introduced special schemes to promote garment exports. The sector (referred to in Bangladesh as Ready-Made Garments, or RMG) became the main driver of exports for several decades. Upon expiration of the MFA quotas in 2005, ten years after the creation of the World Trade Organization (WTO) and its Agreement on Textiles and Clothing, garments accounted for nearly 75% of Bangladesh's merchandise exports. Since then, even with garment exports from China, India and others no longer capped by import quotas, Bangladeshi exports of garments have continued to accelerate, reaching 79% of total merchandise exports by 2011. Exports of RMG soared by an average annual growth rate of nearly 15% from 2006 to 2010, contributing to real GDP rates of 6% between 2009 and 2011.

[10] GOB, Ministry of Agriculture, "Bangladesh Agriculture at a Glance," http://www.moa.gov.bd/statistics/bag.htm

[11] Ahmed, N. et al., "Distortions to Agricultural Incentives in Bangladesh", World Bank, Agricultural Distortions Working Paper 32, December 2007.

Table 1- Distribution of Employment by Sector, Percent of Total, 1981–2010.

Year	Agriculture	Industry	Services	Total
1981	61.0	8.7	30.3	100
1986	57.2	10.1	32.7	100
1991	53.0	10.0	37.0	100
1996	48.8	10.1	41.1	100
2001	51.0	10.0	39.0	100
2006	48.1	11.1	40.8	100
2010	47.3	12.7	40.0	100

Source: Bangladesh Bureau of Statistics (BBS).

In this assessment, we focus mainly on the opportunities to expand Bangladesh's exports of agricultural commodities and agro-industrial goods. These sectors provide the greatest potential for increased exports and income generation for the geographic region targeted in this study. Although a mission trip to India was outside of the scope of our work, given the importance of India as an export market for Bangladeshi goods produced in the SSW region, as well as the relevance of the Customs, transport, and cold chain issues in India to Bangladeshi export prospects, the assessment team recommends that further market assessment and constraints analysis be conducted in India to align with the particular export interests of Bangladesh.

SECTORS

As previously indicated, Bangladesh's most important export sector is textiles and apparel. Together, they account for over 90% of exports, the largest share of which is apparel.[12] Although jute and coir are often considered agricultural products, both the raw fibers and the finished goods are classified as textile and apparel exports by the Harmonized Commodity Description and Coding System (HS) used to classify Bangladesh's trade. The most important agri-sector export is shrimp, which has generally

Box 1: Gaps and Inconsistencies in Bangladesh Trade Data

Although the export market has become an increasingly important part of Bangladesh's economy, the data tracking this growth can be unreliable. Since 2007, Bangladeshi trade statistics have not been reported to the UN Comtrade database. While some recent years of export data are available online via Bangladesh's Export Promotion Bureau (EPB), this data is only reported back to 2008–2009. In addition, the data is reported according to Bangladesh's July-to-June fiscal year rather than the calendar year. The International Trade Centre's (ITC) Trade Map uses the UN Comtrade data to populate its database, but also estimates exports for 2008–2001 by using mirror data for world imports of Bangladeshi products. In our analysis, we tried to consistently use UN Comtrade and ITC Trade Map data. However, it is apparent that the mirror data from 2008–2011 is flawed. In some cases, it is likely underreporting Bangladeshi exports. Occasionally, we have referred to the EPB data instead. These instances are clearly noted and all rankings and time series use the ITC or Comtrade data for consistency.

[12] Includes Harmonized System (HS) Codes 51 to 67, as well as the two broad categories: Textiles, and Footwear and Headgear shown in Figure 1.

enjoyed significant growth. However, the sector faltered during the global recession due to a drop in demand in affluent export markets. Jute also posted a setback when international sanctions on Iran limited that country's imports of jute products.[13] Other agri-exports, such as cut flowers and vegetables, account for a much lower share of exports.

Figure 7 – Bangladeshi Exports by Sector, 2011.

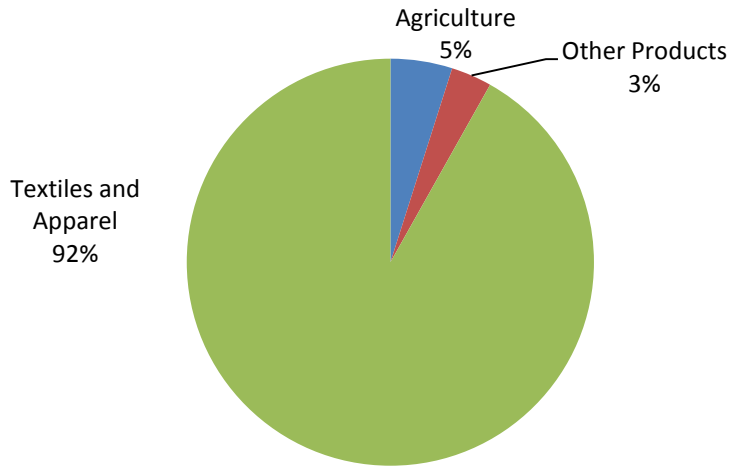


Figure 7 – Bangladeshi Agricultural Exports by Product, 2011.

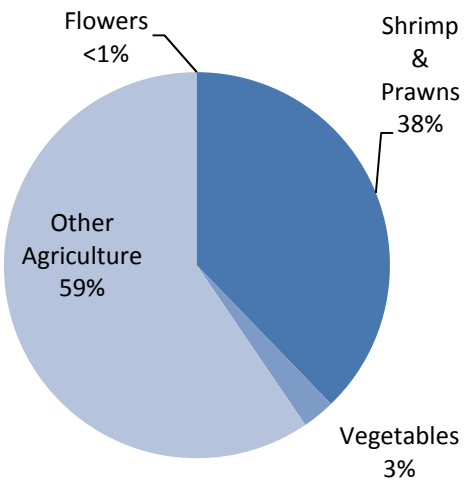
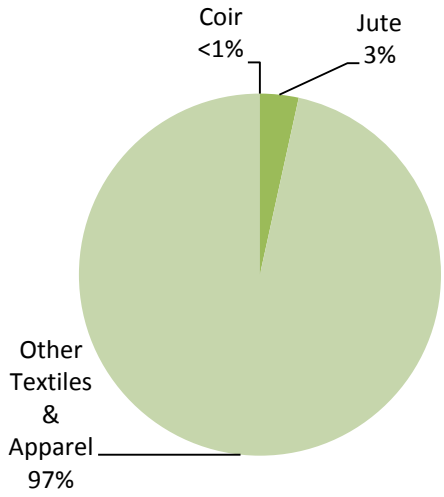


Figure 8 – Bangladeshi Textile and Apparel Exports by Product, 2011.



Source: ITC Trade Map data.

The value chains evaluated are based on the two most important export sectors: agriculture and textiles and apparel. Together, these sectors accounted for 97% of all Bangladeshi exports in 2011. Textiles and apparel dominate Bangladesh's trade statistics due to the booming RMG industry. Although jute and coir constitute only a small share of textile exports (3% and less than 1%, respectively), jute exports by value

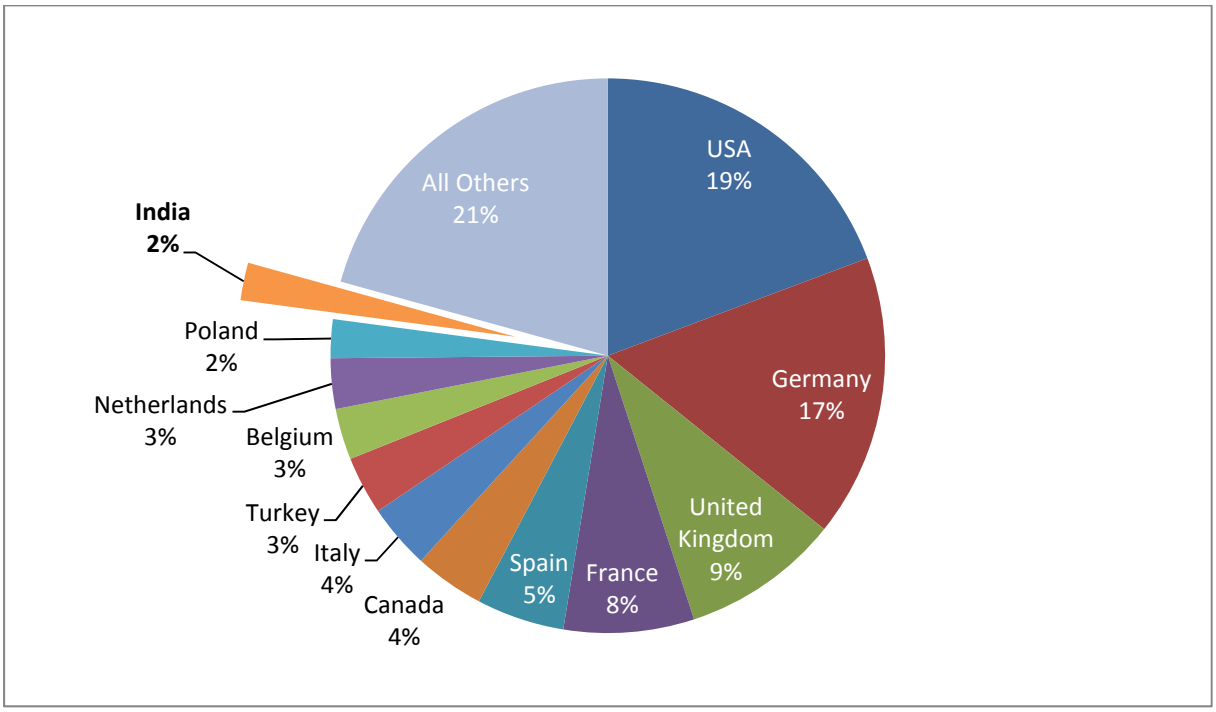
[13] Ahsan, B., "Iran sanction dampens jute exports," Financial Express, Dhaka, July 2, 2012. http://www.thefinancialexpress-bd.com/more.php?page=detail_news&date=2012-07-02&news_id=135175

are nearly double the value of shrimp and prawn exports.[14] Shrimp and prawns make up 38% of agricultural exports, while vegetables and flowers account for a much smaller share (3% and less than 1%, respectively).

TRADE PARTNERS

While global Bangladeshi trade is dominated by apparel exports to the United States and Europe, the country's regional trading patterns are very different. Within South Asia, Bangladesh's most important trade partner is India. Bilateral trade thus reflects broader diplomatic issues between the two countries since Bangladesh's independence in 1971. Despite being largely encircled by India, only 2% of Bangladeshi exports went to India in 2011[15], although substantial informal trade takes place in both directions. This is especially true of agricultural products, including vegetables and fish, which are exported to India in significant quantities. Small-scale trade quarrels have also emerged. In July 2012, for example, Bangladesh banned exports of *hilsa* fish to India, which then retaliated with reciprocal bans.

Figure 9 – Bangladesh Global Exports by Destination, 2011.[16]



Source: UN Comtrade.

[14] According to ITC Trade Map data, Bangladesh exported USD 816 million of jute in 2011 versus USD 480 million worth of shrimp and fish.
[15] UN Comtrade.
[16] A breakdown of data on Bangladeshi exports by country was not available for 2011. Instead, mirror data on world imports from Bangladesh was used to estimate Bangladeshi exports.

Figure 10 – Bangladeshi Export to India by Sector, 2011.

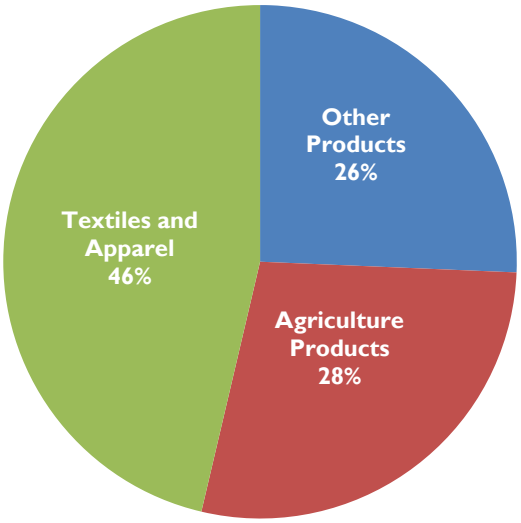


Figure 11 – Bangladeshi Textile Exports to India, 2011.

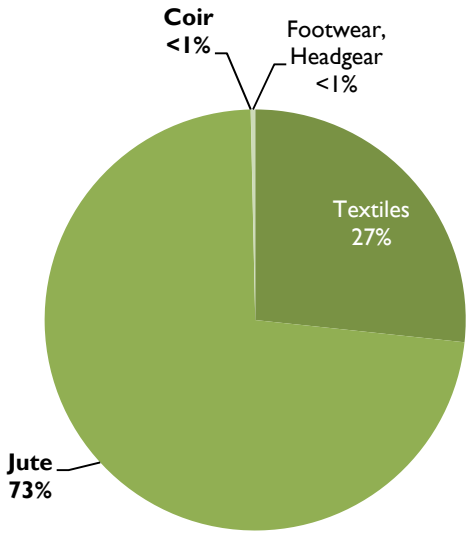
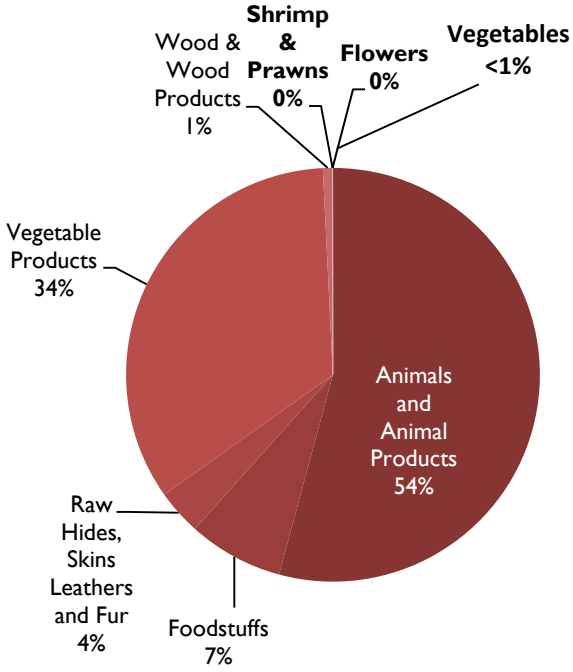


Figure 12 – Bangladeshi Agricultural Exports to India, 2011.



Source: ITC Trade Map.

Of the 2% of Bangladeshi exports that went to India in 2011, nearly half consisted of textiles and apparel, and over one fourth were agricultural products (see Figure 11). Jute accounted for nearly 75% of Bangladesh's textile exports to India, while coir made up less than 1% (see Figure 12). Despite the fact that India is the top jute producer in the world, the country still imports large quantities of raw jute from Bangladesh to process domestically into bags and other products. The majority of Bangladeshi agricultural products exported to India were animal and vegetable products. Fresh and frozen fish products made up most of Bangladesh's animal product exports to India, while nuts, oils and fats made

of much of the vegetable product exports. However, shrimp, prawns and vegetables each accounted for less than 1% of these exports (see Figure 13).

In 2011, India was the second-largest supplier of Bangladeshi imports (see Figure 14), the same position it held in 2002. China remained the top source of Bangladeshi imports between 2002 and 2011, although it has gained market share, rising from 16.4% to 26%, while India fell from 15.7% to 11%. Of Bangladeshi imports from India, 33% were textiles, 15% were vegetable products and 13% were foodstuffs (see Figure 15). Most of the textiles imported by Bangladesh from India consisted of cotton or other fiber blends to be used in the RMG industry and subsequently re-exported.

Figure 13 – Bangladeshi Global Imports by Country, 2011.

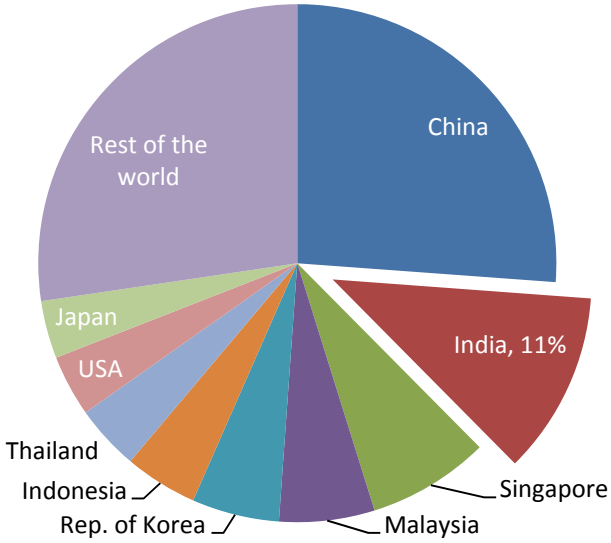
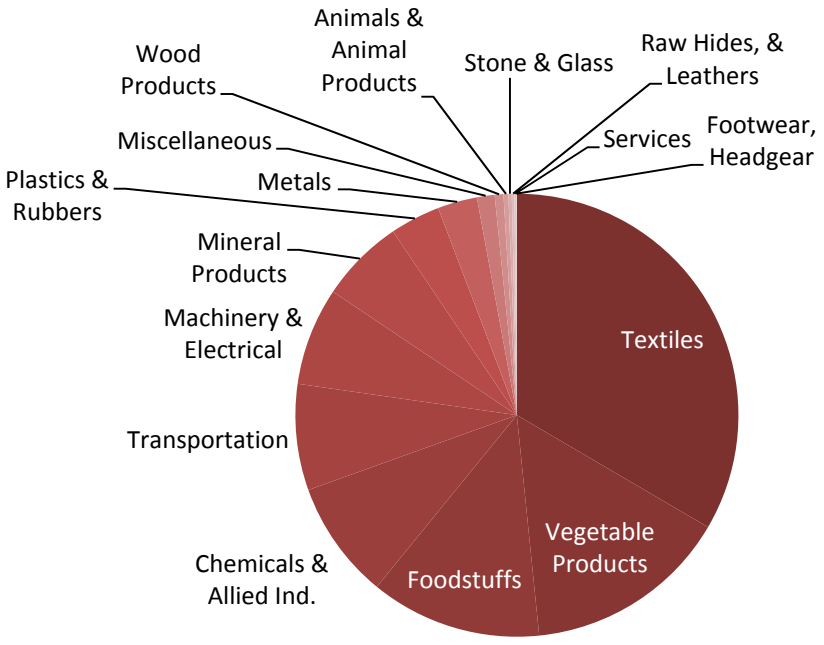


Figure 14 – Bangladeshi Imports from India, 2011.



Sources: UN Comtrade, ITC Trade Map.

From 2002 to 2011, Bangladesh's imports from India increased by an average annual rate of 14%. Over the same period, Bangladeshi exports to India grew by an average annual rate of 30%. Although this mirror data is not as accurate as direct statistics on Bangladeshi imports and exports, it still demonstrates Bangladesh's robust export volume growth to India. Nonetheless, Bangladesh still maintains a trade deficit with India, as it has since independence.

STRUCTURE OF THIS ASSESSMENT

This report identifies the constraints that affect trade development in the focus regions of South and Southwest Bangladesh. It summarizes key opportunities and challenges for each sector with strong export or food security potential in this region. It also offers recommendations for potential interventions that might contribute to growth in regional agro-industrial trade. The assessment team considered activities to improve vertical and horizontal linkages between value chain actors from farm to market, including the roles of farmers, aggregators, local traders, processors, wholesalers, retailers and consumers. The analysis focuses on regional or broader international markets, depending on the source of demand for the commodity or value-added product in question. The study also considers structural and policy impediments to growth across value chains.

In Chapter II, the report is focused on growth opportunities and challenges in five key value chains present in SSW Bangladesh. We evaluate the sector-specific opportunities and challenges using a methodology that considers factors on both the demand and the supply side.

With respect to each value chain, we identify key obstacles to export growth and note where USAID and other donors might consider providing support. Where additional information or analysis is warranted, we also provide recommendations. In each case, where possible, we provide potential private and public sector partners. Our value chain analysis of opportunities and challenges is substantiated by further details that can be found in the annexes.

In Chapter III, the report discusses transportation and logistical issues that stand in the way of growth of Bangladeshi exports. We focus on key corridors and modes of transportation, covering not just the physical environment, but also the regulatory framework and governance issues.

In Chapter IV, we look at challenges and impediments to export growth associated with trade policy (in Bangladesh and in target foreign markets), trade facilitation/Customs, as well as standards issues. Together, Chapters III and IV identify systemic impediments to exports across value chains that affect the agricultural sector in the SSW region of Bangladesh. Where possible, we note which issues constrain exports in the targeted value chains and introduce potential activities that USAID and other donors might consider supporting. Where additional information or analysis is warranted to define or prioritize potential interventions, we make recommendations. As in the value chain chapter, we try to identify potential private and public sector partners.

In Chapter V, the assessment team sifts through recommendations made in previous chapters to identify the most important ones. The choice of the recommendations retained for this chapter was based on two criteria: those that would prove most effective in removing the binding constraints to value chain efficiency, and those that would have the largest impact on expanding exports and generating income in the SSW FTF region.

II. VALUE CHAINS ANALYSIS AND PRIORITIZATION

SECTOR GROWTH OPPORTUNITIES AND THE SOUTH AND SOUTHWEST REGION

The assessment team focused on five potential rural value chain opportunities for further development in SSW Bangladesh. As a guideline for the identification of potential value chains, the team conducted a literature review of several USAID and GOB strategic policy documents, including: USAID's 2011 *Bangladesh Value Chain Selection and Rapid Analysis: A Roadmap for Inclusive Growth for Non-Food Value Chains; Bangladesh Feed the Future FY2011–2015 Multiyear Strategy;* the GOB's *National Food Policy Plan of Action 2008–2015;* and *The Bangladesh Country Investment Plan (A roadmap towards investment in agriculture, food security, and nutrition, Updated Version June 2011).*

Building on the USAID and GOB development priorities in the literature review, the assessment team identified potential value chains in the SSW region according to the following criteria: consistency with USAID and GOB priorities for the agricultural and rural sectors; ability to contribute to income generation and poverty reduction; employment generation potential; the ability to supply foreign markets and raise export earnings with this VC, and the prospects for building on an existing industry foundation or critical mass.

This literature review and prioritization process led the assessment team to focus on an in-depth analysis and ranking of five potential VCs: cut flowers, vegetables, shrimp and prawn, jute and jute products, and coconut products—especially coir-based products. We examine trends in global demand for imports of these products; Bangladesh's position in the global marketplace, including key export markets; and evidence of Bangladeshi producers' comparative advantage in producing these products for exports, including whether market share is growing or decreasing, as well as relative price information, where available.

Two of these (jute and shrimp/prawns) are well-established agricultural export VCs in the SSW. The region has been exporting jute to global markets since before independence in 1971. Aquaculture exports, particularly shrimp, have become significant in the last two decades. These two VCs already have the capacity to supply foreign markets and expand further in south and southwestern Bangladesh.

The assessment team also considered prospects for three less historically important export VCs from the Feed the Future (FTF) zone. Two of these are horticultural—fresh vegetables and cut flowers. For decades, Bangladesh has exported small quantities of vegetables by air to diaspora communities worldwide. This trade has grown with the expansion of available cargo space in passenger flights from Dhaka's Shahjalal Airport. Meanwhile, cut flowers are a non-traditional export for high-end markets in developed countries. The fifth VC is coir-based goods, a by-product of coconut oil production. India has shown considerable success in adding value to coir-based products, but Bangladesh is far from fully exploiting this opportunity. None of these five agricultural products is predominantly plantation-grown. In addition, a large proportion of smallholder farmers in south and southwestern Bangladesh already participate in export VCs for these products.

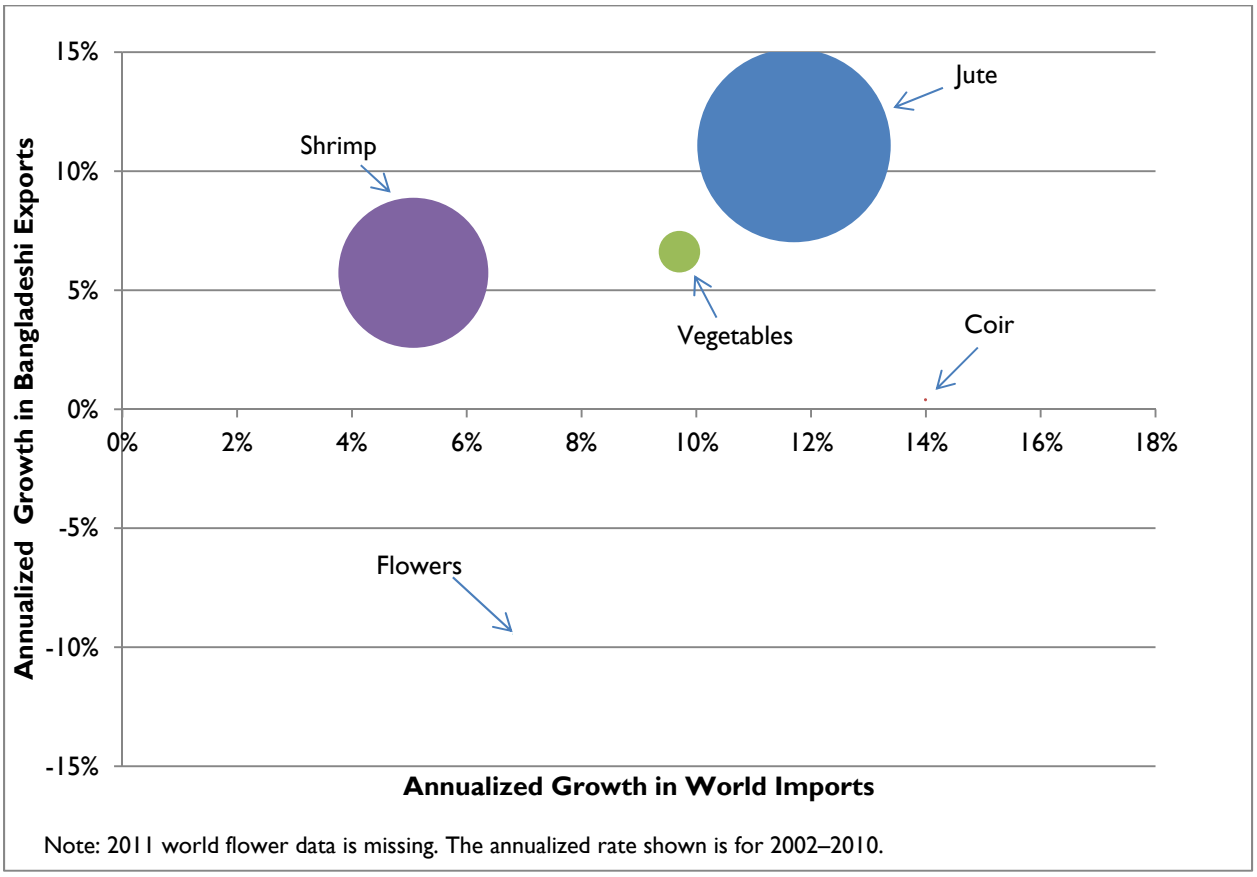
Other potential VCs include leather, which has had to confront issues of child labor and use of hazardous chemicals, and where the value-added component largely takes place in Dhaka, rather than in

the south and southwest. Bangladesh also exports tea, but the south and southwest regions do not grow this crop. As a result of these limitations, leather and tea are not included in the in-depth VC analysis below.

VALUE CHAIN EXPORT OVERVIEW

The chart below (see Figure 16) shows a dynamic analysis of Bangladesh's export performance in the five target VCs (jute, vegetables, shrimp, floriculture and coir-based products). The vertical axis shows the annualized growth of exports in 2002–2012, while the horizontal axis presents the growth in world exports. The best market position is to grow export product sales in expanding global markets. The upper right-hand quadrant indicates the best opportunities within these five VCs from a purely market growth perspective: jute, fresh vegetables and shrimp. The size of the circles is proportionate to the dollar value of Bangladeshi exports.

Figure 15 – Analysis of Bangladeshi Export Dynamics in Targeted VCs, 2002–2011.



Source: ITC Trade Map.

METHODOLOGY FOR VALUE CHAIN ANALYSIS

To catalyze growth that can have transformational impact, the GOB and donors such as USAID should prioritize strategic investments in VCs showing the greatest growth potential. In the south and southwest regions of Bangladesh, the assessment team evaluated and scored five potential VCs, using the following 14 measureable selection criteria:

Demand-Side VC Selection Criteria

1. World market size
2. World import growth rates
3. Bangladesh's revealed comparative advantage (absolute)[17]
4. Bangladesh's revealed comparative advantage (trend)
5. Bangladesh's market share (absolute percentage)
6. Bangladesh's market share (trend)
7. Tariff rates and tariff preference margin

Supply-Side VC Selection Criteria

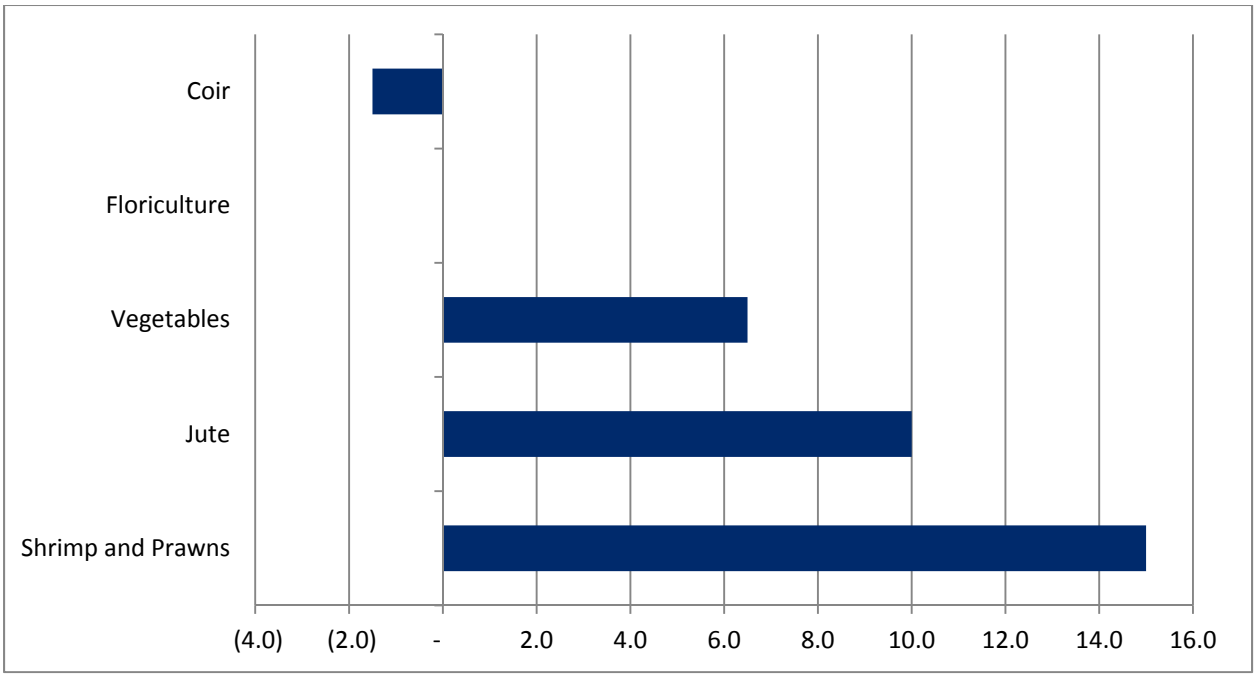
1. Bangladesh's export performance
2. Bangladesh's export value
3. Bangladesh's production growth trend
4. Bangladesh's production price
5. Employment potential
6. Female employment potential
7. Ease of supplying foreign markets in FTF region

We applied equal weight to each of the 14 selection criteria, with the demand-side and supply-side criteria each representing 50% of the total scoring points. The highest scoring VCs represent the best development opportunities for the FTF region in Bangladesh. This takes into account not only economic growth potential, but key concerns such as unemployment, female labor participation and ease of supplying world markets.

The ranking was based on a scale of -1 to +2 for each of the 14 indicators, with the negative one score representing detrimental performance, zero denoting neutral performance and one meaning positive performance. A score of two indicates exceptionally strong performance or potential. In this scale, a universally strong score across all 14 criteria would total 14 points, and exceptional performance and opportunity could potentially raise the score of a value chain to as much as 28 points. The total score for each of the targeted VCs is shown in Figure 17:

[17] Revealed comparative advantage (RCA) is measured by comparing the Bangladeshi export concentration to world export concentration. If Bangladesh has a higher export concentration in a specific product, it can be said to have a comparative advantage. Mathematically, this is expressed as (Ebj/Eb)/(Ej/E), where Ebj is Bangladesh's exports of product j, Eb is Bangladesh's total exports, Ej is total world exports of product j and E is total world exports.

Figure 16 – Strategic Potential of Targeted Value Chains.



Source: CARANA.

DEMAND-SIDE VC SELECTION CRITERIA:

- **World market size for this VC product.** This selection criterion is based on the size of global imports (USD) in this VC product category in the latest available year (2011).
- **World import growth rates for this VC product.** This criterion is based on the annualized percentage growth of imports in global markets for this product category from 2002 to 2011.
- **Bangladesh's revealed comparative advantage (absolute).** This is the ratio of Bangladeshi exports of the VC product to the world's exports of that product, divided by Bangladesh's total exports as a share of world exports.
- **Bangladesh's revealed comparative advantage (trend).** This scoring criterion is based on the annualized trend change (%) for the RCA in 2002–2011, to determine whether the RCA is rising, staying stable or declining.
- **Bangladesh's market share (absolute percentage).** This scoring criterion is based on the percentage of the world import market that Bangladesh exports held in the most recent year (2011).
- **Bangladesh's market share (trend).** This scoring criterion is based on the annualized percentage change in world market share for Bangladeshi exports in this product category from 2002 to 2011.
- **Tariff rates and tariff preference margin.** Tariff rates and margins of preference are important considerations for Bangladeshi exporters trying to expand market share. Average tariffs and margins of preference were calculated for each value chain using data from the top 3 world importers, the top 3 importers of Bangladeshi goods, and India to help determine which value chain was most competitive.

SUPPLY-SIDE VC SELECTION CRITERIA:

- **Bangladesh's export growth performance in this product category.** This criterion is based on the annualized percentage growth in Bangladeshi exports in this product category from 2002 to 2011.
- **Bangladesh's export value in this product.** This criterion is based on the value (USD) for Bangladesh's exports of this product in the latest available year (2011).
- **Bangladesh's production growth trend.** This scoring criterion is based on the annualized percentage growth change for Bangladesh production of this product.
- **Bangladesh's production price for this product.** This is the value (USD/metric ton) of the Bangladesh producer price for this VC product in 2011, or the latest available year.
- **Employment potential for this VC product.** The assessment team analyzed the labor intensiveness of the five VC industries to estimate the levels of employment that can be expected by manufacturing a thousand tons of this product.
- **Female employment potential in FTF region for this VC product.** Reducing female unemployment and increasing women's participation in the labor market are priorities in Bangladesh. The assessment team analyzed the female labor-intensiveness of the five VC industries to estimate the levels of female employment that can be expected by manufacturing a thousand tons of this product.
- **Ease of supplying foreign markets with this product from the FTF region.** The team scored the FTF regional capacity of supplying foreign markets within this VC. It considered infrastructure, processing capacity, the presence of anchor firms and other unique assets as gauges of potential export success.

DATA SOURCES

Data for the scoring criteria was taken from several sources, including:

- The Bangladesh Bureau of Statistics (census and economic survey data)
- The International Trade Centre's TradeMap tool
- The International Trade Centre's Market Access Map tool
- UN Comtrade database
- FAO Statistics Division
- NACA Shrimp Price Study Phase II
- Profitability of Flower Production and Marketing System of Bangladesh
- Investment Opportunity Profile for Cut Flower Plants in NWFP
- Information obtained in interviews and focus group discussions.

In the remainder of this chapter, we present more detailed information on the competitive opportunities and challenges of expanding exports in each of the five targeted VCs.

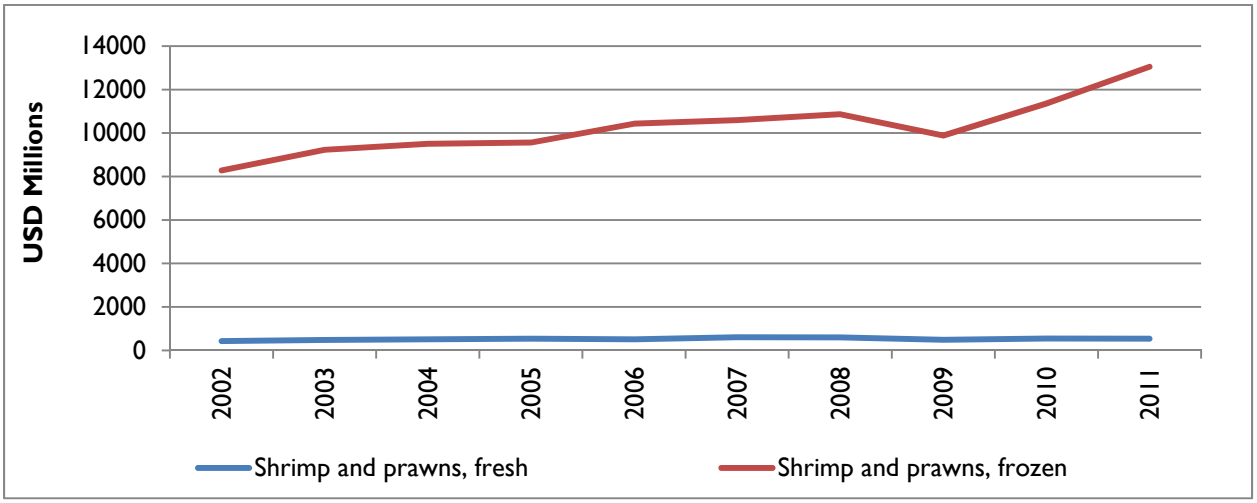
SECTOR OPPORTUNITIES AND CHALLENGES

AQUACULTURE

Opportunities

Global import demand for frozen shrimp and prawns has increased in the last decade. Despite the small dip during the global financial crisis, world imports of frozen shrimp and prawns have continued to grow (see Figure 18). Although developed countries are still the largest importers of seafood, developing countries have been the primary drivers of increased demand.[18] With incomes and urbanization increasing in the developing world, the demand for sources of protein such as fish and shrimp has also risen. To meet this new demand, production has also grown, especially in developing countries.[19]

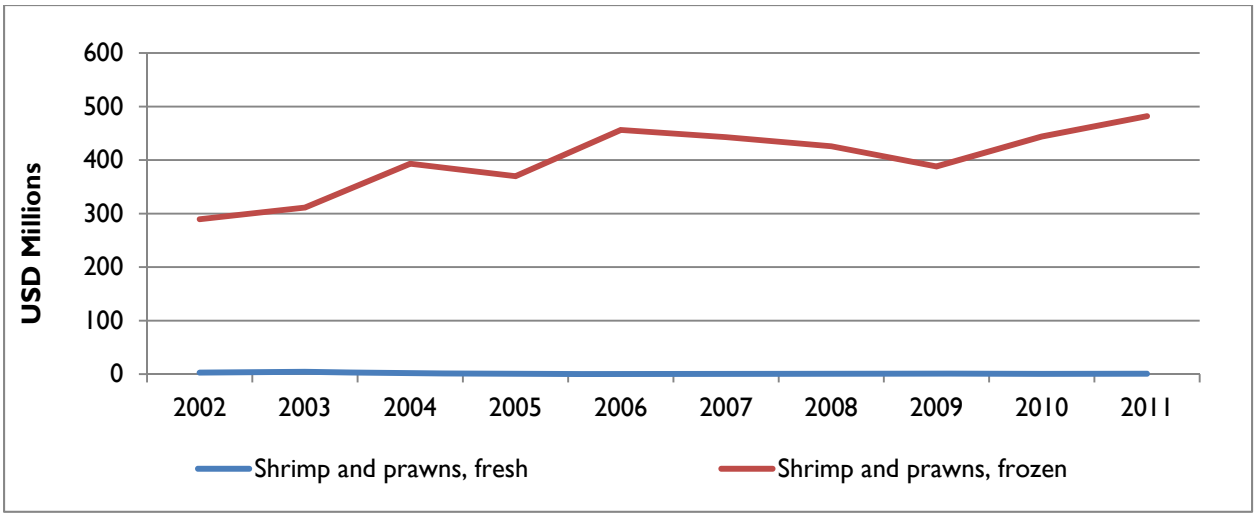
Figure 17 – World Import Demand for Shrimp and Prawns, 2002–2011.



Source: UN Comtrade.

[18]Delgado, C. et al. "The Future of Fish: Issues and Trends to 2020," International Food Policy Research Institute, 2003.
[19] Ibid.

Figure 18 – World Import Demand for Fresh and Frozen Bangladeshi Shrimp and Prawns, 2002–2011.



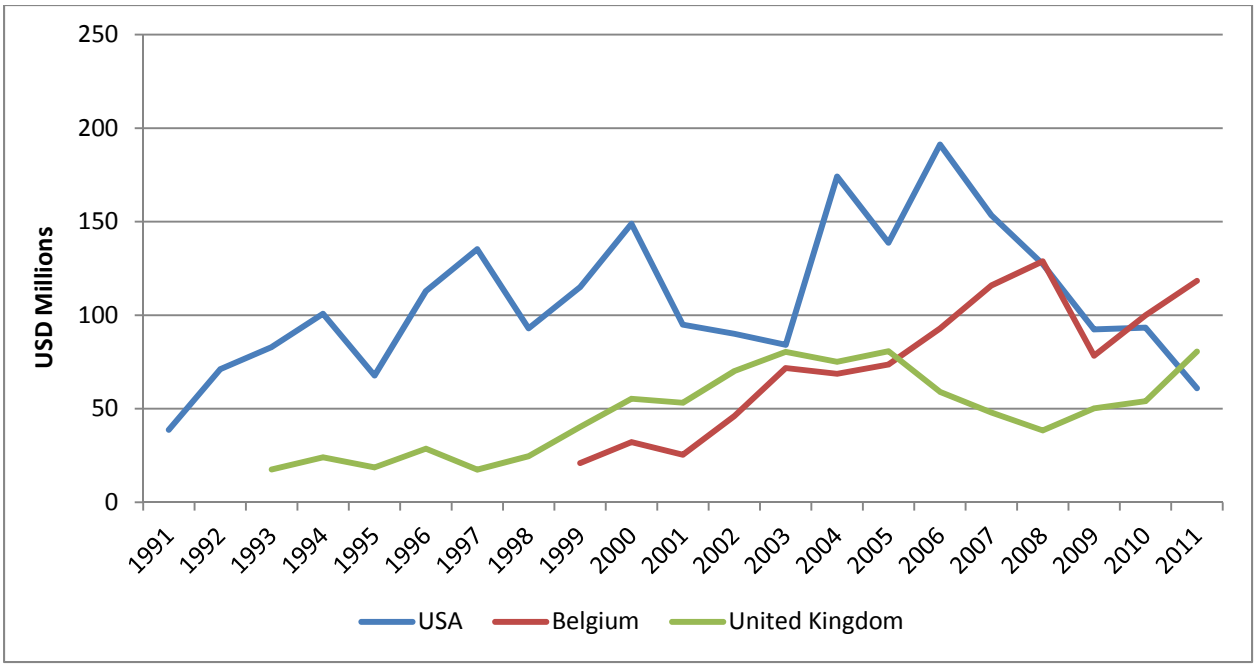
Source: UN Comtrade.

Bangladeshi shrimp and prawn exports[20] are dominated by frozen rather than fresh product, and Bangladesh maintains a comparative advantage in both markets. [21] Developed countries are the top importers of Bangladeshi shrimp and prawns, including the US (30% of imports from 2002 to 2011), Belgium (22%) and the UK (16%).[22] This mirrors the world market for shrimp and prawn imports which is dominated by developed countries. The top importers of global shrimp and prawn products are the United States, Japan and EU countries. Similarly, the vast majority of global imports (95%) consist of frozen shrimp and prawns.

Although demand for Bangladeshi shrimp and prawns has fallen in the United States, it has grown dramatically in other markets. The United States, previously the top importer of Bangladeshi shrimp and prawns (see Figure 20), was ranked third in 2011. However, the drop in demand has been offset by countries such as South Korea (70% annualized growth in demand for Bangladeshi exports from 2002 to 2011), Russia (65%) and Singapore (61%).[23] Overall, Bangladesh still has a very small global market share, showing there is considerable room for growth. In order to take advantage of expanding markets, especially in developed countries such as Belgium or the UK, Bangladesh will need to improve standards and traceability.

[20] Trade Map data comparing HS030613, frozen shrimp and prawns, with HS030623, fresh shrimp and prawns.
[21] Revealed comparative advantage (RCA) is measured by comparing the concentration of Bangladeshi shrimp exports to world shrimp exports. If Bangladesh has a higher export concentration in shrimp, it can be said to have a comparative advantage. Mathematically, this is expressed as (Ebj/Eb)/(Ej/E), where Ebj is Bangladesh's exports of shrimp, Eb is Bangladesh's total shrimp exports, Ej is total world exports of shrimp and E is total world exports. In 2011, the RCA for shrimp and prawns was 60.6.
[22] UN Comtrade, 2002–2011.
[23] UN Comtrade, 2002-2011.

Figure 19 – Import Demand for Bangladeshi Shrimp and Prawns by Top Importing Country, 1991–2011.



Source: UN Comtrade.

New and innovative models of shrimp and prawn production, including organic production provide opportunities for profit. A large swath of shrimp and fish production in Bangladesh is organic by default, but without certification it cannot benefit from the potential 20-25% price premium. There is an opportunity to follow successful models of organic certification developed locally. One example of success is Mostafa Industries which, through a contract relationship with WAB Trading in Germany, collects processes and ships shrimp to the EU. WAB certifies the quality of the shrimp by training the farmers and paying them directly to raise the shrimp. WAB also covers the cost of packaging and transport, but Mostafa provides the direct and indirect labor associated with the processing factory. This model is still very young (only 2 seasons old), and is still not yet well known or widely adapted, but shows considerable promise.[24]

Consumers in some international markets prefer Bangladeshi shrimp. In interviews, industry representatives repeatedly mentioned that shrimp from Bangladesh is especially prized in certain developed markets. There is an opportunity to build up branding for the "flavor of Bangladesh" focused on key markets in North America and Europe. This should be done together with industry exporters, the Bangladesh Frozen Foods Exporters Association (BFFEA), the Bangladesh Shrimp and Fish Foundation (BSFF) and the Bangladesh Export Promotion Bureau.

Shrimp and fish processors have been working at 18–25% of capacity[25] for most of the previous decade. If development projects can increase the output at small farms, there is more than enough shrimp processing capacity in the south and southwest region to off-take shrimp production, process it and bring it to market.

[24] More information regarding Mostafa Industries and the 'collect process and ship' model are available in Annex 2.
[25] Many theories have attempted to explain this processing overcapacity. The most credible one is that a 12% export subsidy for processors encouraged over-building of processing facilities without a commensurate increase in supply from the farmers.

Improvements need to be made to the handling and transportation of post larvae (PLs) shrimp products at hatcheries. During the transportation of PLs to shrimp cultivators, the hatcheries lose between 25 and 50% of their specimens. If a development project can improve post-harvest handling practices for hatcheries, higher economic returns can be achieved for both hatcheries and shrimp farmers.

Bangladesh has failed to take advantage of regional markets. Bangladeshi producers over-rely on the US and EU markets. They should establish new linkages to diversify their export base, preferably to regional buyers such as India, Nepal and Myanmar, or other fast-growing emerging markets such as Russia or Ukraine (34% and 41% annualized growth in demand for global shrimp and prawn imports respectively, 2002–2011).

Bangladesh benefits from considerable tariff preference for both fresh and frozen shrimp and prawn products in established markets. While the US does not impose tariffs on shrimp and prawn imports from any country, the EU normally imposes a 14–15% tariff. This tariff preference is a valuable advantage for Bangladeshi exporters.

Table 2 – 2011 – 2012 Tariff Levels for Shrimp and Prawn Imports from Bangladesh by Top Importing Countries.

HS Code	Item	USA		Belgium		UK	
		Bangladesh	MFN	Bangladesh	MFN	Bangladesh	MFN
030613	Frozen Shrimps and Prawns	0%	0%	0%	15%	0%	15%
030623	Fresh Shrimps and Prawns	0%	0%	0%	14%	0%	14%

Note: MFN = most favored nation. Tariff rates for USA are from 2011. For Belgium and the UK, they are from 2012. Green highlighting indicates tariff preference.
Source: ITC Market Access Map.

Challenges

A limiting factor on the industry is the small parcels of land leased out to farmers, usually under short-term leases of 1 to 3 years. The average size of a marine shrimp farm in Bangladesh ranges from 0.3 hectares (0.7 acres) for a small subsistence farm to 3.0–4.0 hectares (7.4–9.8 acres) for an average commercial farm. Without rights to long-term land holdings, the lessee has little incentive to invest in infrastructure such as pump and filtering systems, holding tanks and waste treatment systems. In addition, few banking institutions offer credit to farmers with short-term leases. Ideally, leases for aquaculture farmland would run a minimum of 30 years, thus ensuring the lessee farmer (and his heirs) an uninterrupted period in which to invest.

Access to credit for production is difficult and loans to significantly increase production levels are nearly impossible to obtain. Aside from commercial bank credit, there are a number of NGO credit facilities available to farmers. But most of these credit lines limits are so low that they can only support subsistence farming. The GOB has special capped lending rates and quotas for banks to support agriculture, but aquaculture is excluded.

Most small to medium-sized farmers sell to intermediaries who offer little or no value-added. Larger farmers can sell directly to processors or go to auction with their product. Some intermediaries provide services for their fees, such as sanitary icing facilities located near farming communities. The farmers can bring their catch and have it inspected, washed and iced before it is packed for delivery. However, not all depots provide such services and even those that do may exploit

geographic monopolies, farmer ignorance or power relations based on credit granted to farmers. A 2011 study by Nesar Ahmed of Bangladesh Agricultural University determined that commission agents, processors and wholesalers made the highest average profit in this VC. They were followed by retailers and ultimately by the farmers themselves.[26] A World Bank competitiveness study from 2004–2005 reported similar findings.[27] Interviews during this study told essentially the same story.

Bangladesh faces weak implementation of health/sanitation rules by actors across the value chain and weak enforcement of health/sanitation standards by government agencies. Incentives for processors to improve environmental or hygienic standards come only after sales are lost and markets closed due to import bans. Bangladeshi prawn exporters and producers paid a high price for the EU import ban on *Golda* prawns in 2009. A related problem is the lack of an effective cold chain for the vast majority of shrimp produced and exported from the SSW region of Bangladesh.

Inadequate traceability systems limit the fish and shrimp industry's ability to expand internationally. Most shrimp and fish processors do not know the source of their raw material, thereby limiting access to international markets that would otherwise be willing to buy from Bangladeshi producers. International buyers increasingly require documentation about where the shrimp was hatched, raised and processed. They may also inquire about the chemicals or pesticides used, when the product was harvested and processed, and what the shrimp was fed during cultivation.

[26] Ahmed, N., "Marketing Low-Value Cultured Fish in Bangladesh", Department of Fisheries Management, Bangladesh Agricultural University, 2011.
[27] Bangladesh Growth and Export Competitiveness Report, International Finance Corporation (IFC), South Asia Region, October 2004.

Recommendations

CURRENT SITUATION	INTERVENTION	POTENTIAL IMPLEMENTING PARTNERS
Most shrimp and fish production in Bangladesh is organic by necessity, but it has not been certified organic.	Follow successful models of organic certification developed by industry players such as Mostafa Industries.	Mostafa, farmer associations and the BFFEA.
Some reports indicate that shrimp produced in Bangladesh is especially prized in a number of developed markets.	Build up the brand image of shrimp around the "flavor of Bangladesh" and focus on key international markets.	Key industry players, the BFFEA and the Bangladesh Export Promotion Bureau.
Small parcels of leased land limit the ability of farmers to expand and develop larger farms to take advantage of economies of scale.	Provide provisions to landowners so they can lease land for periods longer than 1–3 years.	Ministry of Fisheries and Livestock, and landowners.
Access to finance is very difficult, especially for smallholder farmers who lease their land.	Issue standards that will encourage banks to lend against leased land. Develop schemes to finance purchases of small parcels for smallholders.	Leading banking institutions and donor organizations.
Most shrimp and fish processors do not know the source of their raw material and are often unaware of chemicals added to the product. This lack of supply chain traceability limits access to international markets for Bangladeshi producers.	Introduce a pilot supply chain traceability system for shrimp that documents where each kilo of shrimp came from, how it was processed and which chemicals or pesticides where used, as well as when the product was harvested and processed.[28]	Ministry of Fisheries and Livestock, the BFFEA and the Bangladesh Shrimp & Fish Foundation.
Weak implementation and enforcement of Hazard Analysis and Critical Control Points (HACCP) and Sanitary and Phytosanitary Standards (SPS).	Build industry awareness to promote adherence to health and safety standards, and create a competitive advantage for Bangladeshi aquaculture.	Ministry of Fisheries and Livestock, the BFFEA and the Bangladesh Shrimp & Fish Foundation.
The sector has suffered a number of food safety and public relations setbacks over the past 15 years, including deficiencies in hygiene at processing facilities and alleged violations of workers' rights, labor standards and child labor laws.	Implement internationally recognized certification for exporters that would, among other things, set up a chain-of-custody scheme to guarantee a combination of organic production, environmental sustainability, exclusion of child labor and respect for workers' rights.	BFFEA, Ministry of Fisheries and Livestock, Bangladesh Shrimp & Fish Foundation and donor organizations.

[28] This program can subsequently be scaled up to an industry-wide standards program if there is support from donors, government agencies and industry groups.

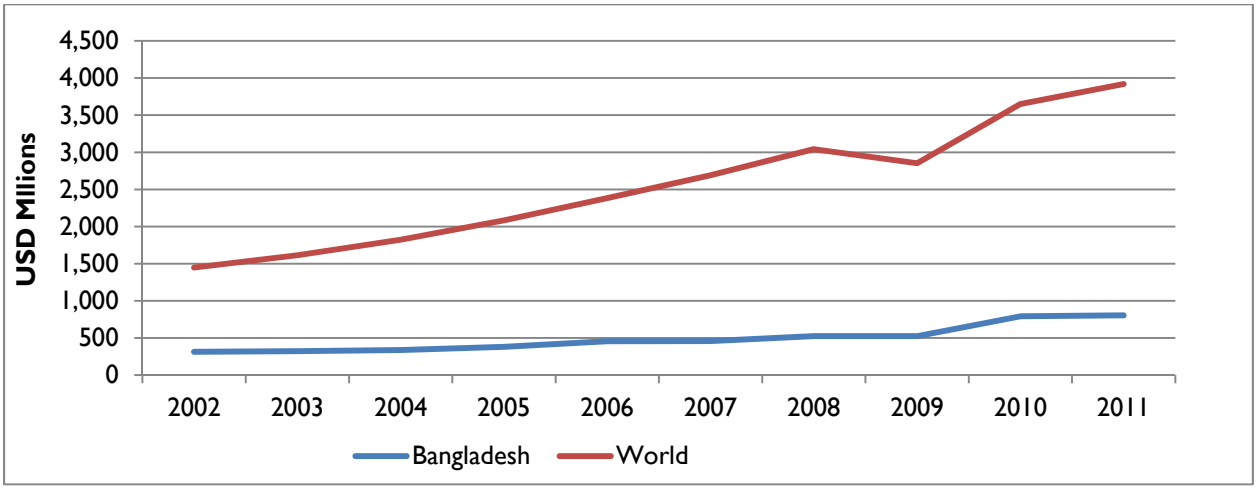
Although Bangladeshi shrimp does not receive a tariff preference in the US market under the GSP program, the potential withdrawal of GSP for Bangladesh (based on labor rights violations) could expose the industry to consumer scrutiny of labor practices in the sector, particularly with respect to women and children, potentially reducing demand for Bangladeshi shrimp and prawn.	Work with the Worker Rights Consortium to establish a model program of labor rights that would be adopted by shrimp processing plants which would include a living wage, the right to organize, and offer health and safety benefits, while guaranteeing that there is no child labor.	BFFEA, Ministry of Fisheries and Livestock, Bangladesh Shrimp & Fish Foundation, Worker Rights Consortium

JUTE

Opportunities

In the last decade, world demand for jute has seen a steady increase (see Figure 21). Over the same period, the annualized rate of demand growth for the top three importers was 19% for the US, 27% in India and 20% in Turkey (see Figure 22).[29] At the same time, Bangladesh's share of world production has fallen since the 1960s (see Figure 23). The growing demand for jute-based products is partially due to environmental awareness. As synthetic substitutes fall out of favor, some producers and consumers prefer jute-based products. Although Bangladesh remains the top exporter of raw jute, India has surpassed it as the number one producer. In 2011, India was also the top importer of Bangladeshi jute, accounting for 34% of all raw jute exports from Bangladesh.[30] Although India imports a large amount of raw jute, it is a major exporter of value-added jute products.

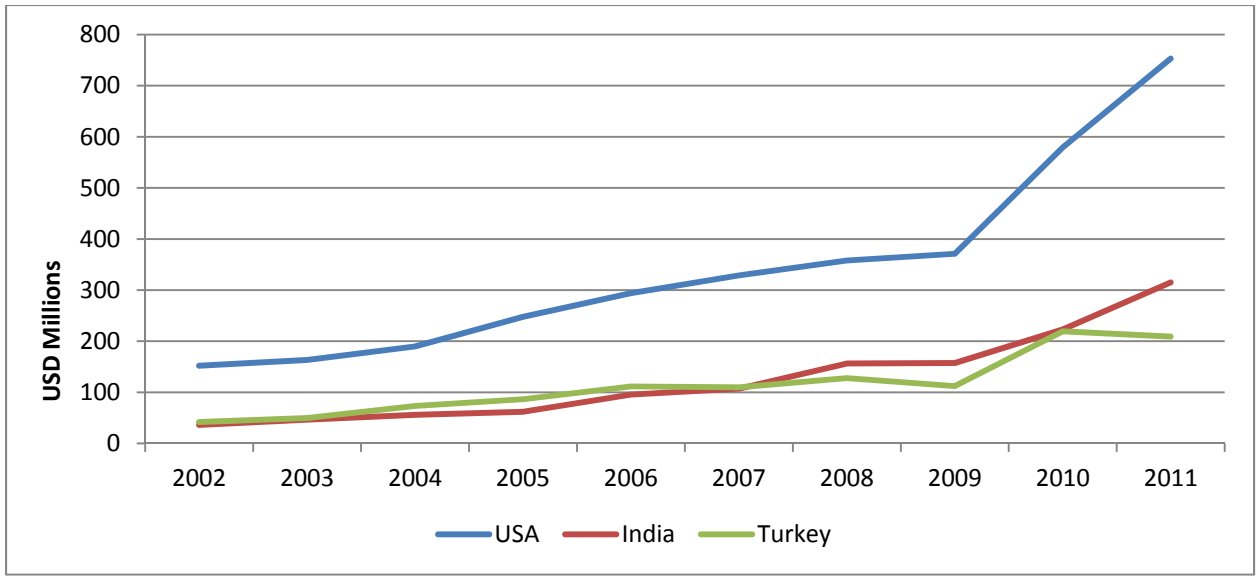
Figure 20 – Import Demand for Jute Products, 2002–2011.



Source: UN Comtrade.

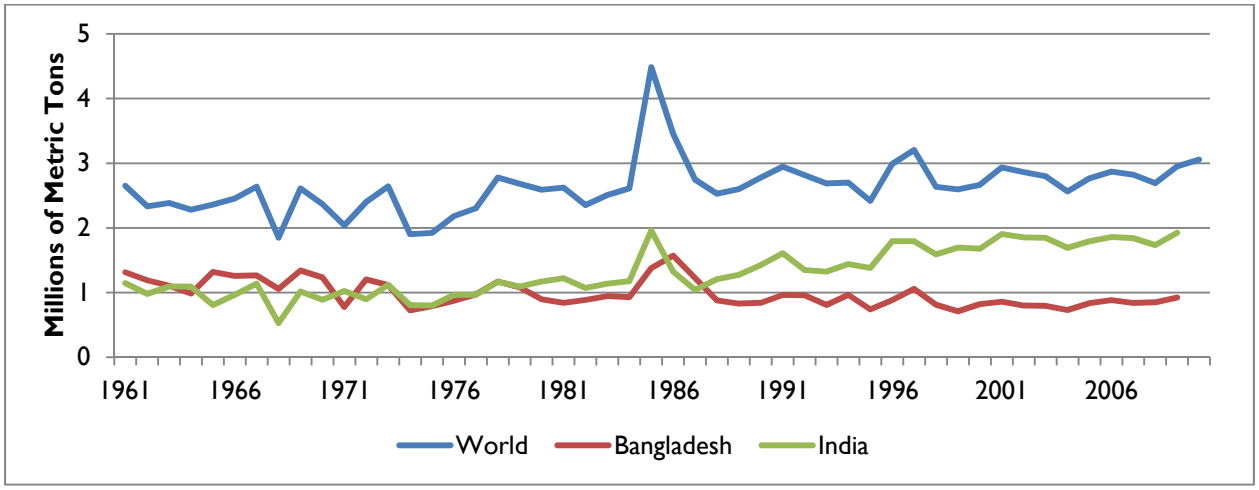
[29] Own calculations based on data from UN Comtrade.
[30] Own calculations based on data from UN Comtrade. Raw jute is defined as HS Code 5303.

Figure 21 – Import Demand for Jute and Jute Diversified Products in the Top Three Importing Countries, 2002–2011.



Source: UN Comtrade

Figure 22 – Jute Production, 1961–2010.



Source: FAO Stat.

Jute diversified products (JDPs)[31] are the primary driver of growth in the global jute industry, accounting for a larger and growing share of global jute imports. So far, Bangladesh has not succeeded in capturing this market segment. In the last decade, the country witnessed a steady decline in its total export market share from 12% in 2002 to 9% in 2011. Over that same period, the comparative advantage[32] of most jute products also eroded. As of 2011, Bangladesh still maintained a

[31] Carpets (HS570500), footwear (HS640590), jute yarn (HS530710 & HS530720), jute fabric (HS531010 & HS531090), jute twine (HS560710) and jute sacks (HS630510). Carpets and footwear may include some non-jute based products, thus making the data imperfect.

[32] The RCA is measured by comparing the concentration of Bangladeshi exports of jute to world jute exports. If Bangladesh has a higher export concentration in jute, then it has a comparative advantage. Mathematically, this is expressed as (Ebj/Eb)/(Ej/E),

comparative advantage in raw jute, yarn, fabric, twine and sacks. But it had lost its advantage in carpets and footwear. Global demand has grown fastest for carpets and footwear, with yarn a distant third. Bangladesh's exports are still dominated by raw jute and jute yarn, and are destined primarily to India, China and Turkey.[33]

Bangladesh could capitalize on demand opportunities in global markets for jute value-added products. Globally, the top five importers of value-added products in the last decade were the US (14%), Turkey (5%), UK (4%), Germany (4%) and Japan (4%).[34] For Bangladesh, the top five importers during this period were Turkey (26%), India (11%), Belgium (8%), Iran (7%) and Syria (5%). This disparity is due to the fact that Bangladesh is not a major exporter of jute value-added products and is therefore missing much of the growth in demand.

Jute production and processing is already a major source of employment and income in SSW Bangladesh. Although manufacturing is not very labor-intensive, a large jute-spinning mill typically employs about 500 people. The farming and retting of jute is quite labor-intensive and can create jobs at a higher multiple than the mills. Jute production also provides opportunities for female employment, with women accounting for 60% of mill labor. Women also help with the sowing, harvesting and retting of the jute. A smaller number of people are also employed in the jute trading business, aggregating the raw jute produced by the farmers and selling it to mills, traders or exporters. Jute's long history in Bangladesh means that the industry can benefit from a well-established network of distribution channels.

Challenges

Jute is primarily produced in SSW Bangladesh, making Mongla Port the closest export platform. However, most jute and jute products are exported through Chittagong Port. Because jute is not a perishable product, SPS testing, packaging, and length of transportation are not a major concern for exporters. Still, exporters have had problems meeting delivery deadlines as the traffic in and out of Mongla Port is unpredictable, causing them to lose their contracts.

Bangladesh faces considerable tariff escalation from three of its largest trading partners. India, China and Pakistan are the largest importers of Bangladeshi raw jute, and Turkey is the largest importer of total jute products from Bangladesh. Turkey does not impose tariffs on any jute imports. However, India, China and Pakistan allow duty-free imports of raw jute, while imposing tariffs that range from 4%–10% and 6%–25%, respectively, on most value-added products (see Table 3).[35] Despite the tariff escalation, India and China grant preferential tariffs below the rate of most favored nation (MFN). Pakistan does not grant Bangladesh tariff preference for any products except yarn.

where Ebj is Bangladesh's exports of jute, Eb is Bangladesh's total jute exports, Ej is total world exports of jute and E is total world exports. In 2011, the RCA for jute and jute products was 62.0.

[33] UN Comtrade.

[34] UN Comtrade.

[35] India allows duty-free imports of carpets (HS570500). China allows duty-free imports of carpets and sacks (HS630510), but imposes a duty of 5% on raw jute that has been processed but not spun (HS530390).

Table 3 – 2008-2011 Tariff Levels for Jute Imports from Bangladesh by Top Importing Countries.

HS Code	Item	India		China		Pakistan		Turkey	
		Bangladesh	MFN	Bangladesh	MFN	Bangladesh	MFN	Bangladesh	MFN
530310	Raw Jute	0%	7.5%	0%	5%	0%	0%	0%	0%
530390		0%	10%	5%	5%	0%	0%	0%	0%
530710	Yarn	0%	10%	3%	6%	6%	10%	0%	0%
530720		0%	10%	3%	6%	6%	10%	0%	0%
531010	Fabric	0%	10%	5%	10%	25%	25%	0%	4%
531090		0%	10%	5%	10%	25%	25%	0%	4%
630510	Sacks	0%	10%	0%	10%	25%	25%	0%	2%
560710	Twine	NA	NA	NA	NA	NA	NA	NA	NA
570500	Carpet	0%	10%	0%	14%	25%	25%	0%	8%
640590	Footwear	0%	10%	10.5%	15%	25%	25%	0%	0%

Note: MFN = most favored nation. Tariff rates from China and Turkey are from 2011. Indian tariffs are from 2009 and Pakistani tariffs are from 2008. Green highlighting indicates tariff preference.
Source: ITC Market Access Map and WTO Tariff Download Facility.

Bangladesh jute production has been stagnant since the 1960s. This is due to the decline in real prices for jute, as well as to the growth of synthetic substitutes. In addition, Bangladesh government policy has favored rice production. In the past few years there has been an uptick in production as prices and demand have grown. Throughout this period, yields have also increased, allowing more jute to be produced on less land.

While jute is easy to grow and production can be scaled up, the quality of jute fiber suffers because farmers lack a reliable source of high-quality seeds and the free-flowing water to ret (soak) the jute. Government control of seed research and distribution and the lack of private sector participation have led to shortages of high-quality seeds during the sowing season. This has forced some farmers to use lower-quality imported seed. As water salinity rises, farmers have also had trouble finding sources of clean freshwater to ret their jute. Government programs have tried to spread ribbon-retting technology, which uses less water. But some farmers complain that ribbon-retting is not suitable for large quantities of jute.

Most jute mills, both state and privately owned, operate below capacity and much of the machinery is obsolete. Many of the mills are saddled with large debt overhangs acquired under state control in the 1970s and 1980s. The outstanding debt prevents them from investing in equipment. This means that most jute mills cannot expand production to include higher value-added products that would require new technological investments. In 2002, the government founded the Jute Diversification Promotion Center to promote the design and production of higher value-added products. But it has thus far accomplished very little.

Farmers do not have full knowledge of jute grading or pricing and frequently sell their raw jute for less than the going market rate. With the current industry structure, farmers do not sell their jute directly to mills, but to traders. While this system works well for jute distribution, the traders use it to their advantage by not fully sorting the jute when they buy it from the farmers. This allows them to pay a lower average price for the mix of grades. When the jute is resold to the mills, it is appropriately sorted and the higher-quality jute commands superior prices. As a result, traders make considerable profits.

Recommendations

CURRENT SITUATION	INTERVENTION	POTENTIAL IMPLEMENTING PARTNERS
Undersupply of high-quality jute seeds.	Encourage the private sector to participate in nursery production of high-quality jute seeds.	Bangladesh Jute Research Institute, Bangladesh Seed Association, International Jute Study Group and the Common Fund for Commodities.
Farmers' lack of knowledge of jute grades and prices.	Extension services and export-led firms improve producer knowledge of seed quality, retting technology, and jute grading and pricing.	Department of Agricultural Extension, Bangladesh Jute Research Institute and private firms.
Poorly managed state-owned jute mills.	Study on the impact of government participation in the milling industry in terms of efficiency and quality.	Bangladesh Jute Mills Corporation and the Center for Policy Dialogue.
Jute mills with a large debt overhang and outdated equipment.	Renegotiation of debt terms or sale of underperforming mills, paving the way for new private investment and technologies.	Bangladesh Jute Spinners Association, Bangladesh Jute Mills Association, Bangladesh Jute Mills Corporation and the Center for Policy Dialogue.
Low level of domestic production of jute diversified products.	Programs to support domestic development and production of value-added products and branding of Bangladeshi products.	Jute Diversification Promotion Center, Bangladesh Jute Research Institute, Export Promotion Bureau and the Bangladesh Jute Goods Association.
Unreliable delivery from Mongla Port.	Dredging of Mongla Port to improve access and increase port traffic.	Mongla Port Authority.

FRESH VEGETABLES

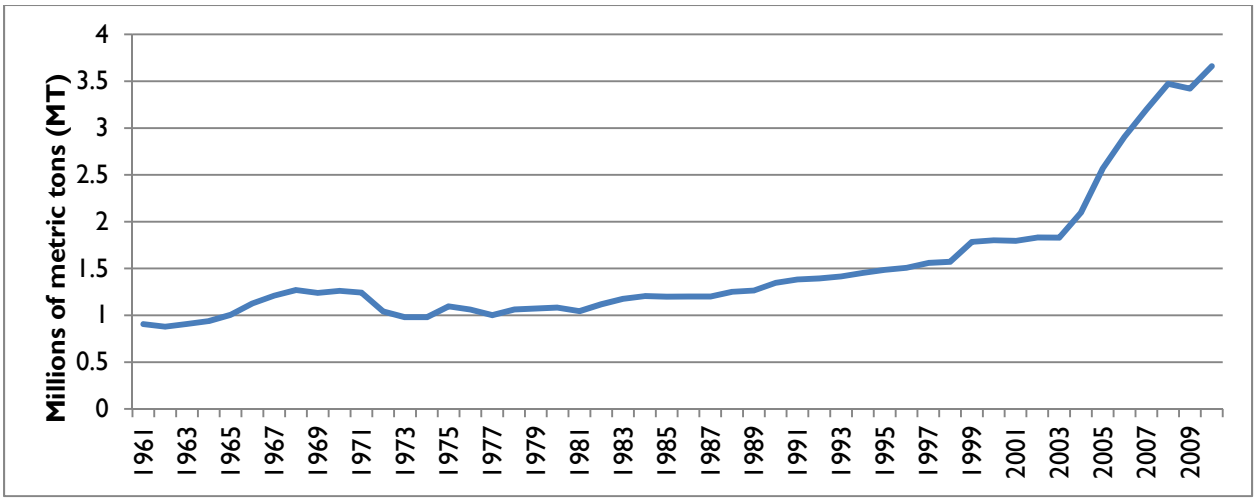
Opportunities

Global import demand has grown steadily, more than doubling from 2002 to 2011. The largest importers of vegetables in the last decade were the US (13%), Germany (12%), UK (9%) and France (6%).[36] The demand growth was matched by an increase in global vegetables production of just over 200 million metric tons (MT) in 1961 to more than 1 billion MT in 2010.[37] In part, demand growth for vegetables is being driven by higher disposable incomes and improved diets in countries such as China and India.[38]

In the last decade, Bangladeshi production of vegetables has increased dramatically, although yields have remained stagnant. The rise in production in Bangladesh (see Figure 24) is due to a dramatic increase in the area under cultivation. Meanwhile, world production of vegetables has increased due to steadily improving yields.[39] Despite its own increase in production, Bangladesh still only accounts for one-third of 1% of global vegetable output because yields have remained stagnant (see Figure 25).[40]

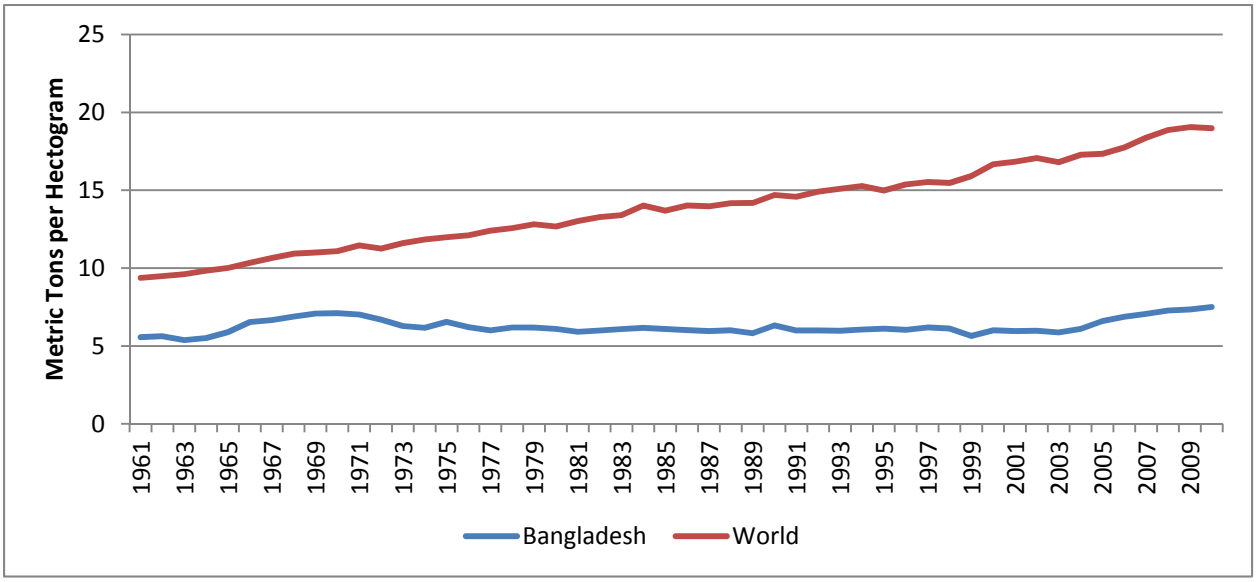
[36] UN Comtrade.
[37] Food and Agriculture Organization (FAO), Statistics Division, data on primary vegetable production.
[38] http://rstb.royalsocietypublishing.org/content/365/1554/2793.full
[39] FAO statistical comparison of data on area harvested, yields and production.
[40] Ibid.

Figure 23 – Bangladeshi Vegetable Production, 1961–2010.



Source: FAO Stat.

Figure 24 – Vegetable Yields in Bangladesh Compared with Global Yields, 1961–2010.



Source: FAO Stat.

Markets for Bangladeshi products are rebounding from recent declines. Global demand for imports of vegetables from Bangladesh declined sharply during the world financial crisis, but it appears to be rebounding. Bangladesh saw a 21% decline in import demand in its largest foreign market, the UK. As of 2011, UK imports had recovered significantly, but not to pre-crisis levels.[41] Presently, Bangladesh has no comparative advantage in overall vegetable exports. However, it shows a slight comparative advantage in potatoes.[42] Consistent with this finding, Bangladesh has seen a slight increase in export

[41] UN Comtrade.

[42] The RCA is measured by comparing the concentration of Bangladesh's exports in vegetables to the world exports in vegetables. If Bangladesh has a higher export concentration, it can be said to have a comparative advantage. Mathematically, this is expressed as (Ebj/Eb)/(Ej/E), where Ebj is Bangladesh's exports of vegetables, Eb is Bangladesh's total exports, Ej is total world exports of vegetables and E is total world exports. In 2011, the RCA for all vegetables was 0.4, while it was 1.9 for potatoes.

market share of potatoes. Nevertheless, it maintains less than 1% market share in overall vegetable exports.[43]

Demand from diaspora communities provides a growing overseas market. While the UK is a major importer of both Bangladeshi vegetables and world vegetable exports, Bangladesh is not a significant source of exports to other major importers. Top importers of Bangladesh vegetables include the UAE, Kuwait, Italy, Malaysia, Qatar and Saudi Arabia.[44] None of these countries are major global importers of vegetables, but they are home to significant Bangladeshi expatriate communities. It is clear that Bangladesh currently does not produce sufficient amounts of vegetables to service the large overseas markets. However, it has been successful in tapping the growth in expatriate demand.

Bangladesh is able to produce vegetables at prices similar to other top producers and exporters such as China. Although production volume and packaging remain major issues in terms of vegetable exports, Bangladeshi prices have closely tracked Chinese prices in the last decade.[45] If the country is able to solve issues of supply and quality, it could potentially expand its market share in major importing countries such as the UK.

There are opportunities for aggregators to provide value-adding services to producers. Horticultural goods are forwarded through inadequate infrastructure by a large pool of intermediaries. These intermediaries include collectors, aggregators, transporters, wholesalers, processors and retailers. The goods are vulnerable to damage due to improper and excessive handling. In addition, intermediaries have a reputation for extracting profit from the value chain while adding very little value. Some have been in business for 30 years and know the markets as well as any industry player. Therefore, there is an opportunity to support competitive innovation among this pool of intermediaries who can offer services such as refrigeration, packing and conveying market information (price signals) from end-buyers.

Challenges

Limited investment in cold-chain infrastructure results in high levels of post-harvest losses, low productivity and poor quality. Post-harvest losses are typically 35–40%, with some processors reporting losses as high as 50%. This is caused by the lack of on-farm cooling and drying facilities, limited pack houses, and a cold chain that is nearly nonexistent.[46] In addition, producers and traders rely on poor transportation options such as rickshaws and trucks.

Bangladesh does not enjoy any preferential import duty in two of its top markets. The UAE and Kuwait charge the MFN tariffs of 4.2% to 5%, respectively, on Bangladesh's key vegetable exports. The UK, historically a large importer of Bangladeshi vegetables, imposes a 0% tariff on all processed and unprocessed vegetables from Bangladesh (see Table 4). However, it is more demanding in terms of SPS requirements.

[43] Own calculations based on Trade Map data of HS0701 to HS0714.
[44] Own calculations based on UN Comtrade.
[45] FAO Statistical Producer Price Index.
[46] IFC research found 74 cold-storage units unevenly distributed across Bangladesh, with 27 in the southwest. They included 10 units in Jessore and 5 in Khulna. However, almost all this capacity serves to store potatoes.

Table 4 – 2012 Import Tariff Levels for Processed and Unprocessed Vegetables from Bangladesh by Top Importing Countries.

HS Code	Item	UK		UAE		Kuwait	
		Bangladesh	MFN	Bangladesh	MFN	Bangladesh	MFN
0710	Vegetables, cooked or uncooked	0%	13.9%	5%	5%	5%	5%
0711	Vegetables, preserved, but unsuitable for immediate consumption	0%	16.6%	5%	5%	5%	5%
0712	Dried vegetables	0%	11.1%	5%	5%	5%	5%
0713	Dried leguminous vegetables	0%	0.3%	4.2%	4.2%	4.2%	4.2%
0714	Manioc, arrowroot, artichokes, sweet potatoes and similar roots, fresh or chilled, frozen or dried	0%	10.8%	5%	5%	5%	5%

Note: MFN = most favored nation. Tariff rates from the UK, UAE and Kuwait are from 2012. Green highlighting indicates tariff preference.
Source: ITC Market Access Map.

Fragmented holdings make up the majority of cultivated land in Bangladesh. Most farmland is held by smallholders working parcels of 0.25–1.00 hectares (1.2–2.4 acres). Many smallholder farmers produce food for their families, but they also sell the surplus at the market. However, these surplus vegetables often cannot be exported because of poor quality, excessive chemical residues and inadequate post-harvest techniques. Also, a high percentage of smallholders lease their land, usually for one to three years. This creates a situation similar to the one experienced by shrimp and fish farmers, in which farmers have little incentive to invest in the land for the long-term. As leaseholders, they cannot gain access to formal credit. Additionally, small farms lack the economies of scale required to enter new markets and control access to end markets.

At the border with India, Bangladeshi trucks are required to off-load their merchandise onto Indian trucks for the journey to the final destination. Separate from the cost of multiple transshipments, this excessive handling, coupled with the lack of cold-storage facilities, long wait times at borders and poor roads, creates losses that are in excess of the total cost of transporting the goods from the factory to the final destination in India.

There is insufficient access to affordable credit across the entire value chain, especially at the farmer level. Farmers' lack of access to formal credit forces them to rely on loans from input suppliers and informal sources, often at predatory rates. This also forces farmers to enter into an asymmetric relationship with input suppliers, which leads to situations in which the farmers become indebted share-croppers. This creates a cycle of debt from which it is difficult to escape.

Food-safety problems have reduced the quality and marketability of Bangladeshi vegetables. According to the World Bank, 47% of farmers in Bangladesh apply more pesticides than the recommended amounts.[47] In addition, food-borne illnesses are on the increase, many of which can be traced to the mishandling of horticulture products that are washed with contaminated water, stored on the ground or in unclean containers, or handled in unhygienic ways.

[47] Dasgupta, S., et. al, "Health Effects and Pesticide Perception as Determinants of Pesticide Use: Evidence from Bangladesh," World Bank, 2005

The high and unpredictable costs of air freight make exports of fresh horticulture from Bangladesh uncompetitive. Airlines generally prefer to carry dry goods such as garments, which can bring a premium to the carriers. As a result, the shipments of fresh vegetables are often pushed aside.

The problems associated with the Dhaka airport cargo terminal are numerous and complex. Dhaka's Shahjalal Airport is not equipped to handle cargo traffic on the ground. In addition, there are no cargo planes dedicated to perishable goods. The only cargo planes that regularly fly out of Bangladesh typically carry readymade garments. Vegetables are exported either on passenger planes or on whatever space is available on garment cargo planes, if at all.

There are no accredited laboratories in Bangladesh that can effectively perform phytosanitary tests on products destined for export or for domestic consumption. This creates situations in which products are often held at the border until labs in other countries can carry out tests and release the results, thereby adding another constraint to competitiveness. The untrained manpower and archaic equipment pose additional barriers to setting up accredited laboratories.

International buyers are interested in buying larger volumes of vegetables, but Bangladeshi farmers and exporters are unable to meet minimum volume, quality and delivery requirements. Relying on domestic producers, exporters can teach, train, request, grade and pack the produce. However, they do not have control over each farm's consistency, quality or quantity. Aggregating large volumes of export-quality fresh vegetables requires significant management and capital, both of which are sorely lacking in Bangladesh.

Recommendations

CURRENT SITUATION	INTERVENTION	POTENTIAL IMPLEMENTING PARTNERS
Inadequate cargo terminals, storage infrastructure and cold-chain facilities at key points along the value chain.	Public Private Partnership to develop Jessore and Dhaka air cargo facilities and integrated cold chains.	Private investors, Ministry of Civil Aviation and Tourism and the Ministry of Commerce.
Absence of certified testing laboratories and lack of conformity to international standards such as GlobalGap.	Promote private investment in a certified laboratory, as well as the high quality standards of GlobalGap certification and compliance.	BSTI, Ministry of Industries and the Hortex Foundation.
Inability of international buyers to access large volumes of vegetables that meet strict quality and delivery requirements.	Promote firm-smallholder value chain linkages to transfer technology and know-how, and develop longer-term relationships through contract farming.	Hortex Foundation and the Federation of Bangladesh Chambers of Commerce and Industry.
Most exports have been directed at ethnic markets in Europe, the Middle East and the United States.	Establish new market linkages internationally.	Export Promotion Bureau and the Chamber of Commerce.
Fragmented land holdings have limited the ability of Bangladeshi producers to develop a larger presence in international markets.	Encourage cooperatives and associations to create economies of scale and access to markets.	Hortex Foundation and the Ministry of Agriculture.
Complex system of intermediaries extracts value from the industry. But it could add value by realigning the incentives.	Create a value chain framework to embed the true value-added services of intermediaries deep in the value chain.	BRAC, Hortex Foundation and the Ministry of Agriculture.

CUT FLOWERS

Opportunities

Global import demand for fresh flowers has grown steadily, from USD 4.6 billion in 2002 to USD 7.8 billion in 2010.[48] Import demand dropped in 2009 due to the world financial crisis, but it appeared to recover to pre-crisis levels in 2011. In terms of flower varieties, roses accounted for the largest import demand, followed by chrysanthemums, carnations and orchids.[49]

Between 2002 and 2010, the vast majority of import demand came from developed economies such as the US, EU and Japan. The demand for cut flowers is related to rising incomes. Some of the fastest growth in the years preceding the world financial crisis came from emerging economies in Eastern Europe.[50] Historically, cut flowers were produced close to end-markets. But as packaging and transportation have become more sophisticated, imports from distant suppliers have become common. Rising demand and improved logistics have also increased the number of flower-producing and exporting nations.[51]

Bangladesh is still a small player in the market for cut flowers, with its export market share peaking at 0.6% in 2007.[52] The only area in which Bangladesh shows significant comparative advantages is in exports of foliage and branches used in floral arrangements. The majority of imports of floral products from Bangladesh consist of these two products. This may be due to the fact that packaging is still a major issue for Bangladeshi flower exporters. Foliage is hardier and more easily transported.

The largest import markets for Bangladeshi floral products are in the Middle East and Asia. The top importer, due mostly to imports of foliage, is Saudi Arabia.[53] Others include Vietnam, the EU, India, Qatar and Kuwait.[54] Although the EU is also a major world importer of flowers, it is the only major importer that Bangladesh currently serves. It is possible that the expatriate community is the main driver of demand for Bangladeshi exports in Middle Eastern and Asian markets. In order to expand into high-growth markets, Bangladesh must overcome domestic issues of supply, transportation and quality.

Flower production is increasing in response to domestic and external demand. Flowers are used to mark many social occasions in Bangladesh. As a result, a local market has emerged in recent years. This trend is expected to continue with the growth of the middle class. Bangladeshi exports of cut flowers have also grown steadily. The country enjoys a preferential tariff rate on exports to the EU, although export numbers are low (see Table 5).

[48] UN Comtrade.
[49] Ibid.
[50] Rikken, M. "The European Market for Fair and Sustainable Flowers and Plants," Belgian Development Agency (BTC), 2010.
[51] Sarkar, S. "Global Floriculture Industry Trends and Prospects," Floriculture Today, 2012.
[52] Calculated from Trade Map data. Note: No data on Bangladeshi cut flower exports is available after 2007 and thus mirror import data is used.
[53] UN Comtrade.
[54] Ibid.

Table 5 – 2010-2012 Import Tariff Levels for Flowers from Bangladesh by Top Importing Countries.

HS Code	Item	Saudi Arabia		Vietnam		EU (France)	
		Bangladesh	General Tariff	Bangladesh	General Tariff	Bangladesh	MFN
060120	Bulbs, tubers or roots in flower	0%	0%	0%	0%	5%	5.3%
060310	Cut flowers and flower buds for bouquets	NA	NA	NA	NA	NA	NA
060311	Fresh roses and buds	5%	5%	20%	20%	0%	8.5%
060312	Fresh carnations and buds	5%	5%	20%	20%	0%	8.5%
060313	Fresh orchids and buds	5%	5%	20%	20%	0%	8.5%
060314	Fresh chrysanthemums and buds	5%	5%	20%	20%	0%	8.5%
060315	Fresh lilies and buds	5%	5%	NA	NA	0%	8.5%
060319	Fresh flowers and buds	5%	5%	20%	20%	0%	8.5%
060390	Cut flowers and buds for bouquets	5%	5%	20%	20%	0%	10%
060499	Foliage branches for bouquets	NA	NA	20%	20%	NA	NA

Note: MFN = most favored nation. Tariff rates are from 2012 for Saudi Arabia and France, and 2010 for Vietnam. Green highlighting indicates tariff preference.
Source: ITC Trade Map.

Challenges

Flower production is a new industry in Bangladesh with numerous internal growth constraints. The sector has emerged without adequate training or oversight. There is limited knowledge of production technology and the use of farm inputs, and limited willingness to invest in infrastructure on rented land. The country has limited packaging technology and cold storage facilities. In addition, quality assurance is lacking at all stages of the value chain.

Cut flowers from the Jessore region are exported primarily by air from Dhaka's Shahjalal Airport, but availability of cargo space is very uncertain. To gain air cargo space, the cut flowers compete with other, often higher-value goods such as pharmaceuticals, RMG and live crab. Biman, the national airline, does not clear goods for transportation until the day of the flight. If an exporter's cut flowers cannot be transported on a particular day, they are diverted to the local market.

Lack of packaging and cold-chain infrastructure increases damage and reduces flower life. Flowers harvested in the morning typically arrive at Dhaka by midnight or early the following day. They are transported with very basic packaging by ordinary trucks without refrigeration units. Then they must wait off-site at the exporter's facility until cleared for air transportation. Prior to being loaded onto the airplane, exporters complain that flowers are stored in hot, unfavorable conditions. The airport has no on-site space dedicated to cold storage.

Bangladeshi flowers do not meet international standards. Production and post-harvest handling standards are rudimentary. The cut flowers are not graded or packaged to international standards. Cultivation rarely takes place in greenhouses and is highly dependent on weather patterns. This leads to variability in color, stem thickness and length, which are important for international buyers. Top markets demand less than 5% defects. Meanwhile, Bangladeshi flowers are estimated to have 4–5 times that level of damage. Advanced packing to prevent bruising during transportation is not available and packaging is only done to local standards.

Inputs for production are available, but farmers need more training. The insecticides and fertilizers in Bangladesh are not specifically formulated for flowers. Farmers do not know how to use pesticides. They also lack awareness of EU rules on acceptable pesticide levels. The same applies to the use of fertilizers and other chemicals. Because of incorrect quantities and poorly timed applications of these inputs, flower yields are low. New flower varieties have been developed by the Bangladesh Agricultural Research Institute (BARI), but they are not widely available or used.

There is little or no value-added production in Bangladeshi floriculture. Flowers are frequently woven into garlands and other assemblies. But downstream processing of flowers into essential oils, essence, incense or other higher value products is rare.

Flower cultivation is labor intense, providing employment to large numbers of people. Commercial floriculture is practiced by 10,000 to 12,000 families. The sector provides direct and indirect employment to more than 100,000 persons. In addition, the flower assembly sub-sector employs almost exclusively women laborers.

Recommendations

CURRENT SITUATION	INTERVENTION	POTENTIAL IMPLEMENTING PARTNERS
Low production yields.	Introduce new varieties adapted to lower water use and increasingly saline conditions. Improved extension services to farmers.	Bangladesh Agricultural Research Institute (BARI), GOB agricultural colleges, GOB extension agents and commercial partners.
Limited investment in greenhouse production and drip irrigation equipment.	Increase knowledge of production technologies and promote investment and access to finance.	Commercial suppliers of equipment, microcredit institutions and farmer extension agents.
Limited knowledge of best practices in floriculture production.	Develop a business model for smallholder farms together with leading firms to disseminate best practices and promote high-quality standards.	GOB agricultural colleges, GOB extension agents and commercial partners.
Limited vase life of flowers due to lack of transportation and cold storage infrastructure.	Carry out a study to identify at what point vase life is most vulnerable and develop commercially sustainable cold chain solutions.	Flower grower associations, trucking companies, flower wholesalers and packing stations.
Limited value-adding services such as advanced packing, color sorting and quality.	Establish a model packaging house for exports.	Flower grower associations, logistics companies, wholesalers and export companies.
Unreliable air transportation to export markets.	Develop MOUs and contracts with air cargo companies to confirm export air cargo space availability prior to harvesting.	Flower grower associations, commercial airlines and logistics companies.

COIR

Opportunities

Although most coconuts produced in Bangladesh are processed into oil, world demand for coir products has increased steadily over the past decade, making it a promising new sector.[55] Since 2002, world imports of coir and coir-based products have increased by more than 200% in value terms (see Figure 26).[56] This growth has been driven primarily by increased imports of raw coir, with imports of coir yarn and floor coverings remaining stable (see Figure 27). The largest and fastest growing importer of coir and coir-based products in the last decade was China. Global coir prices have also risen from USD 500 per MT in 2007 to USD 600 per MT in mid-2011.[57]

Figure 25 – World Import Demand for Coir, 2002–2011.

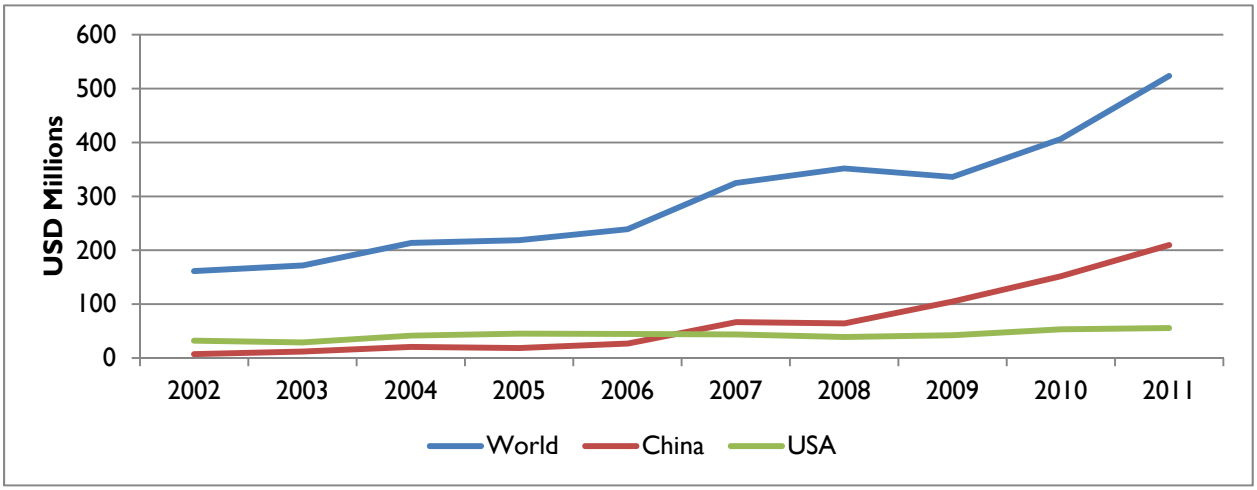
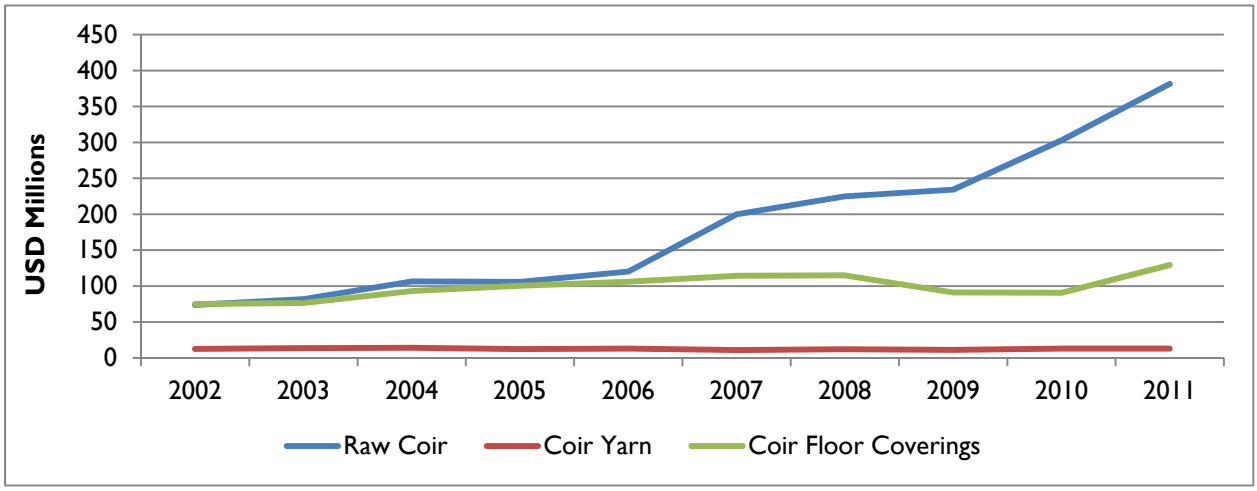


Figure 26 – World Import Demand by Coir Product, 2002–2011.



Source: UN Comtrade.

[55] HS5305: coconut, abaca, ramie & other vegetable fibers, raw, processed not spun; HS530810: coir yarn; HS570220: floor coverings of coconut fibers.
[56] Own calculations based on UN Comtrade data on world imports of HS5305, HS530810 and HS570220.
[57] FAO Indicator Price, FOB, Coir Fiber and Products.

World coir production increased dramatically in the early 1990s and peaked in 2007. This appears to be due to growth in leading coir producers such as India, but also to the entrance of new producers such as Vietnam as of 1995. The increase in production has been driven by demand in China, which uses raw coir as a mattress fiber, as well as by the discovery of new uses for coir products as anti-erosion geo-textiles.[58] As illustrated in Figure 26, China has surpassed the US as the top importer of raw coir and coir products. In 2011, China accounted for 40% of world import demand, with the US and Belgium each accounting for about 10%.

Bangladesh remains a minor contributor to coir production and exports. However, it could try to replicate India's coir development model. Since 1961, Bangladesh has never accounted for more than 3% of total world coir production.[59] Coir production grew from the 1970s to the early 1990s, but has stagnated and declined since 1995.[60] Because of low output levels, Bangladesh's export market share has remained below 1% in the last decade.[61] During this period, India, the leading world exporter, has retained one-third to one-half of global export market share.[62] Bangladesh's proximity to India would suggest that it shares the same environmental advantages in coconut production. Therefore, it could also become a major coir producer and exporter.

Coir is not a perishable product and is not difficult to package or ship for export. At the same time, producers in the SSW region could have difficulties supplying major export markets since traffic through Mongla Port is unreliable. In addition, demand for coconut products is still primarily driven by domestic consumption of coconut oil. For Bangladesh to take advantage of growing global demand, it must first address the domestic issues that led to the erosion of its RCA.

Developing the coconut sector provides a unique opportunity to develop multiple complementary products. There is a need for a comprehensive study showing the value-added and jobs created for each of several clusters of joint products possible in the coconut sector or the optimal product mix for different market conditions. The diversity of potential coconut-based products poses a challenge. The two major outputs of coconut processing are coir and coconut oil. However, these products come in various grades and market channels. They also have different by-products. The mix of joint products is variable as it is a function of available technology, the cost of inputs and the prices of the various outputs.

Challenges

The Philippines, one of the top importers of Bangladesh coir products, imposes relatively high tariffs. These tariffs rise with the level of processing, from 5% for raw fiber and 7% for yarn to 15% for floor coverings. In contrast, the other two big importers of Bangladeshi coir and coir-based products, the UK and Spain, impose no import tariffs on any of these three products (See Table 6). Although China discourages Bangladesh's coir sector through its tariff regime, other major importers do not.

[58]Leson, G. "Coir in a Nutshell," Fiber Futures.
[59] FAO Statistics Division.
[60] Ibid.
[61] Own calculations based on UN Comtrade data.
[62] Ibid.

Table 6 – 2008-2012 Import Tariff Levels for Coir and Coir-based Products from Bangladesh by Top Importing Countries.

HS Code	Item	Philippines		UK		Spain	
		Bangladesh	MFN	Bangladesh	MFN	Bangladesh	MFN
5305	Raw fiber	5%	5%	0%	0%	0%	0%
530810	Coir yarn	7%	7%	0%	0%	0%	0%
570220	Floor covering	15%	15%	0%	4%	0%	4%

Note: MFN = most favored nation. Tariff rates are from 2012 for the UK and Spain, and 2008 for the Philippines. Green highlighting indicates tariff preference.
Source: ITC Market Access Map.

As global imports of coir have increased in the last decade, Bangladesh has seen its comparative advantage in coir products erode. Although export data after 2007 is unreliable,[63] Bangladesh's comparative advantage for coir and coir-based products has steadily eroded. In recent years, it may have disappeared altogether.[64] This is consistent with the country's declining output and low export market share. Although China and the US lead the world in coir imports, during the last decade the top importers of Bangladesh were the Philippines (33%), the UK (30%) and Spain (10%). China and the US combined accounted for only 5% of imported Bangladesh coir over the same period. [65]

Coir producers lack connections to international markets. A Bagerhat manufacturer complained of little or no EPB assistance to export coir products. It was difficult to advertise abroad and attend trade fairs. In India, coir is used for carpet backing, but the Bagerhat manufacturer had no connections to carpet manufacturers across the border.

Supplying international buyers can be challenging due to transportation issues. The Bagerhat manufacturer was exporting coir products to South Korea, but shipping via Mongla Port proved to be unreliable. Chittagong Port was so far away that the factory lost the customer due to transportation delays.

The GOB does not prioritize coconut products. There is no national research center or industry promotion body for coconuts. Bangladesh does not have an overarching coconut authority similar to the Indonesian Coconut Forum, the Coconut Development Board of India or the Philippines Coconut Authority. The country also lacks a dedicated coconut research development organization such as those of Indonesia (Indonesian Coconut and Other Palms Research Institute), Papua New Guinea (Cocoa and Coconut Institute), the Philippines (Albay Research Center and the University of the Philippines' Institute of Plant Breeding) and Vietnam (Research Institute for Oils and Oil Palms). In addition, Bangladesh is not part of the 18-member Asian and Pacific Coconut Community.

Coconut trees are found widely dispersed across SSW Bangladesh, but they do not grow on plantations. The coconut trees grow in forested areas around houses and along field boundaries, including alongside fish/shrimp farms. This dispersed nature of production poses a challenge to direct initiatives aimed at improving productivity and achieving economies of flow in marketing. It also makes it

[63] UN Comtrade and Trade Map do not have export data from Bangladesh after 2007, so mirror import data is used instead.
[64] The RCA is measured by comparing the concentration of Bangladesh's exports in coir to world coir exports. If Bangladesh has a higher export concentration in coir, it has a comparative advantage. Mathematically, this is expressed as (Ebj/Eb)/(Ej/E), where Ebj is Bangladesh's exports of coir, Eb is Bangladesh's total exports, Ej is total world exports of coir and E is total world exports. In 2011, the RCA for coir products was 0.2.
[65] Own calculations based on UN Comtrade data on world imports of coir and coir products from Bangladesh.

difficult to certify any fair-trade, organic or green benefits from the production process. In addition, it is difficult to document chains of custody.

Coconut oil suffers from a lack of comparative market advantage in relation to other vegetable oils. Canola, palm, peanut, soybean and sunflower oils have all overtaken coconut oil and driven down prices. As quality standards have risen across the board, coconut oil has become less profitable.

Coir-producing firms cannot find buyers for coir dust by-products, although they can be used as flower fertilizer or in mosquito coils. For instance, a coir rope factory in Jessore District, in the heart of a major flower-growing district, had large piles of coir dust that it could not sell. Still, the manager of a Bagerhat coir-products factory noted that rose growers had previously imported Bangladeshi coir dust into the Netherlands. It is unclear what lies at the root of this market failure.

Recommendations

CURRENT SITUATION	INTERVENTION	POTENTIAL IMPLEMENTING PARTNERS
Difficult access to international markets for coir products.	Promote business-to-business linkages. Target low-tariff markets for value-added coir products, such as the UK and US. Classify coconut processing as agro-processing to allow companies to benefit from bank loans with lower interest rates.	Export Promotion Bureau.
Difficulties for coir producers in the SSW to supply export markets because of traffic conditions at Mongla Port.	Improve reliability and efficiency of Mongla Port.	Mongla Port Authority and other donors (possibly ADB or World Bank).
Uncertainty about the optimal mix of coconut products.	Conduct a study to establish the potential for value-added and job creation associated with coconut value-added products, including coir.	A Southeast Asian coconut research institute and the Bangladesh Institute of Development Studies (Agriculture & Rural Development Division).
Absence of institutions to promote the market development of the coconut sector.	Create a private-sector driven industry organization for the coconut sector.	Federation of Bangladesh Chambers of Commerce and Industry, drawing on the experience of Creation (Private) Ltd in jute.
Absence of institutions to carry out agronomic or processing research to optimize coconut products.	Create a private-sector driven organization to coordinate and perform coconut-sector research.	A Southeast Asian coconut research institute, the Bangladesh Agricultural Research Institute and the USAID/Accelerating Agricultural Productivity Improvement project.

Coir-producing firms' inability to find buyers for coir dust by-products.	Establish and build market linkages, nationally and internationally.	Export Promotion Bureau and the Chamber of Commerce.
Absence of productive coconut plantations makes it difficult to improve agronomic productivity.	Undertake small-farmer extension projects to promote techniques that improve coconut productivity.	Ministry of Agriculture, the USAID/Agricultural Extension Capacity Building Activity and leading firms.

III. TRANSPORT AND MOBILE COMMUNICATIONS

This chapter examines the various modes of transportation used in Bangladesh to export agricultural products from the SSW region: consignments by road along two corridors to Kolkata from Jessore and Khulna; rail cargo, particularly through Benapole to Kolkata, but potentially through Khulna to Mongla Port; shipping through Mongla Port; and air freight from Dhaka's Shahjalal Airport. The chapter closes with a discussion of the potential for mobile technology to facilitate marketing and trade, as well as to make agricultural production more efficient.

The chapter starts by assessing the three primary modes of transportation that Bangladesh relies on to export agricultural products from the SSW region:

1. Road transportation along two corridors: Jessore-Kolkata and Khulna-Kolkata,
2. Rail cargo along the Benapole-Kolkata corridor and a potential rail corridor from Khulna to Mongla Port, and
3. Air-freighted exports from Dhaka's Shahjalal Airport.

TRANSPORT

We examine Bangladesh's principal export transport modes through three different lenses:

1. The quality and condition of physical transportation infrastructure,
2. The effectiveness of public management and governance of transportation infrastructure, and
3. The efficacy of private management and use of transportation infrastructure.

For SSW Bangladesh, the two principal road export corridors are:

- Jessore to Kolkata, West Bengal, via the Benapole-Petrapole border crossing, and
- Khulna to Kolkata, West Bengal, via the Bhomra-Ghojadanga border crossing.

In addition to these two entirely road-based corridors, two intermodal corridors serve SSW Bangladesh:

- The highway heading south from Khulna to Mongla Port for sea shipments, and
- The highway heading northeast to Dhaka for air shipments.

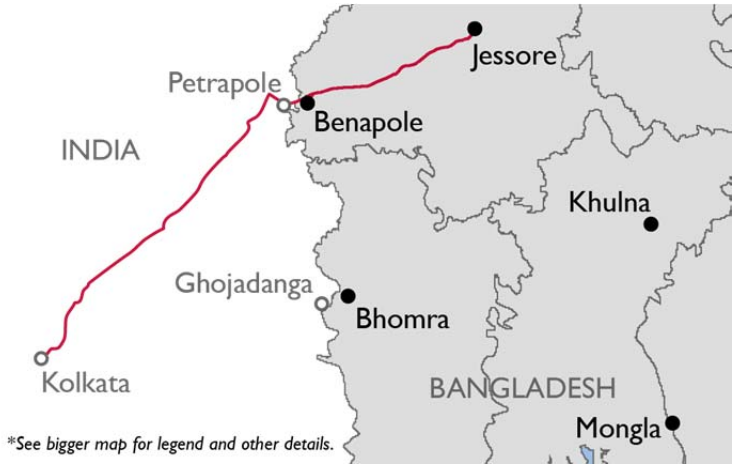
ROADS

Routes, Commodities, Volumes

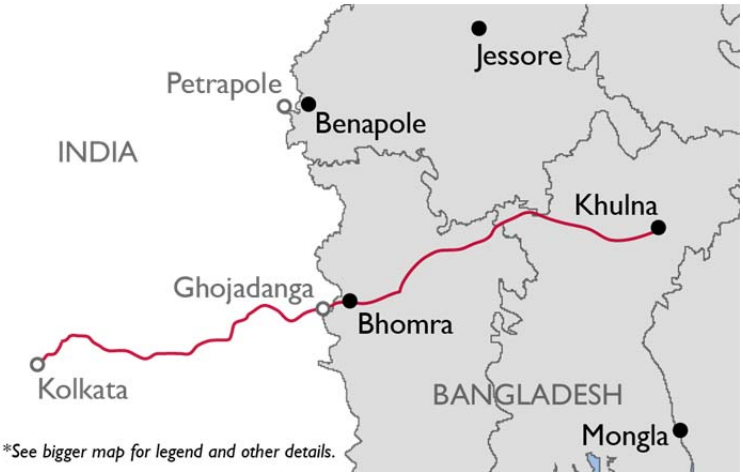
The distance by road from Dhaka to Kolkata is 494 kilometers (km): 413 km (84%) from Dhaka to the Benapole border area; and 81 km (16%) from the Indian border city of Petrapole to Kolkata in West Bengal, India. This is the major road corridor between Bangladesh and India (see Map 2). Agricultural producers from the SSW link into this corridor for the final 100 km between Jessore and Kolkata. The border areas at Petrapole and Benapole are "land ports", rather than just "customs posts." This means they have a wider range of facilities: sanitary and phytosanitary (SPS) testing laboratories, banks (for

payment of import duties) and bonded warehouses (for storage of goods waiting for the conclusion of formalities). Most of the goods are trucked in bulk, with relatively few containers transiting on this road corridor.

Map 2 – Road between Jessore and Kolkata.



Map 3 – Road between Khulna and Kolkata.



A more southerly road corridor linking Dhaka and Kolkata (see Map 3) passes through the customs posts of Bhomra (Bangladesh) and Ghojadanga (India). This corridor is 536 km long, 40 km longer than via Benapole-Petrapole. The roads on either side of the Bhomra-Ghojadanga border are in worse condition than those leading to the Benapole-Petrapole crossing. Some stretches are un-tarred, while others are very narrow. In addition, a structurally weak bridge on the Indian side leads to transshipment of goods from trucks carrying 40 metric tons (MT) onto smaller trucks. However, the northern corridor also has problems. At Petrapole, all cross-border traffic is channeled through a one-lane road, creating significant bottlenecks.

Exports of raw jute to India are shipped mostly by sea from Mongla and Chittagong, while Bangladeshi white fish and cleaning products made from coir are transported via Benapole-Petrapole. At the Bhomra-Ghojadanga border, India mostly imports readymade garments (RMGs), fuel briquettes ('coal') made from rice husks, cleaning cloths, and coir-based cleaning products. Some fish from Bangladesh is also imported through Ghojadanga, but it mostly enters India through Petrapole due to the absence of SPS testing labs at Ghojadanga. Bangladesh mainly imports onions and fruit from India at the Bhomra-Ghojadanga border. Benapole receives imported plant material (for the flower and vegetable sectors) and onions from India.

The assessment team observed a large imbalance of trade along the Bangladesh-India trade corridors. For example, approximately 250 trucks transit from India to Bangladesh along the Petrapole-Benapole corridor each day,[66] while only half as many trucks (about 125) move in the opposite direction.[67] At

[66] According to the Bangladesh Land Port Authority (BLPA), approximately 90% of the total imports from India arrive through Benapole. http://en.wikipedia.org/wiki/Benapole

Bhomra, only about 20 truckloads cross daily from Bangladesh to India. In contrast, about 300 truckloads transit daily from India to Bangladesh along this road corridor.[68]

In addition to the major imbalance in trade flows, the assessment team noticed a very low level of truck freight being traded relative to the size of the countries' populations and economies. Only about 375 trucks travel daily between the two countries along the Benapole-Petrapole trade corridor. Increased flows of goods between Dhaka and Kolkata depend on improvements in both road infrastructure and trade facilitation. The evidence suggests that road and bridge quality are not currently the most binding constraints on that route.[69] Customs clearance processes, legal constraints on cross-border trucking, logistical shortcomings, testing for standards enforcement and rent-seeking behavior cause longer delays. These factors also impose higher costs. We discuss these issues in detail in the trade facilitation chapter of this report (see Chapter IV).

Logistics Problems for Bangladesh's Trucking Sector

The assessment team found that the overall inefficiency of the private Bangladeshi trucking sector constrains road transportation of traded goods. These trucking sector inefficiencies also lead to higher costs. By extension, they lower the economic returns of Bangladeshi exporters and producers. There are three main sources of trucking-sector inefficiency:

- Small truck size,
- Truck overloading, and
- Monopolistic freight brokerage services.

Small Truck Size. Most trucks on the Jessore-Kolkata corridor are small by international standards. They officially carry 10–15 MT, whereas the international norm is a tractor-trailer carrying 40 MT. The small trucks are not suited to carry containers and therefore fail to capitalize on economies of scale.[70] However, larger trucks could have problems on some narrower, tree-lined sections of the corridor.

Truck Overloading. Informal sector truckers in both countries routinely overload their vehicles[71], either because of incentives from the shipper or because freight intermediaries, who link truckers to freight, require the trucker to accept illegal loads. In Bangladesh, these truckers typically load 20 MT on a truck designed for 10–15 MT. They regard "facilitation payments" at weighing stations as part of the logistics chain and a routine cost of doing business, rather than a real threat to their overloading. The damage thus inflicted on the infrastructure threatens the long-term success of the trade corridor.

An efficient international road-transportation trading corridor requires good roads and bridges, or at least benefits from limiting the degradation of existing infrastructure. However, the Dhaka-Kolkata

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[67] This is consistent with Bangladesh's trade deficit with India of USD 4.06 billion in 2010–11, up from USD 2 billion in 2006–07: "Regional trade: non-tariff barriers set back exports to India," *The Daily Star*, November 24, 2011, http://www.thedailystar.net/newDesign/news-details.php?nid=211361

[68] Compare with cross-border truck flows in countries with much smaller populations than India and Bangladesh. For example, 500 trucks transit daily at the Ureña border crossing between Colombia and Venezuela: http://www.dejanlucic.net/VENEZUELA-COLOMBIA.html

[69] A road bridge over the Padma River at Mawa would shorten the journey between Dhaka and Kolkata by about 200 km. The bridge would significantly increase the southwest's connectedness to the rest of the country, reducing transportation costs and promoting regional economic development: http://en.wikipedia.org/wiki/Padma_Bridge

[70] One disincentive to using larger trucks is that weak bridges require offloading to smaller trucks. This is a daily reality in India along the Bhomra-Ghojadanga corridor, but does not happen on the corridor through Benapole and Petrapole.

[71] Formal-sector truckers have fewer incentives to compromise the future performance of their technically efficient trucks by overloading their vehicles. But informal-sector truckers tend to use fully amortized trucks. The short-term benefits of overloading these trucks may outweigh the long-term costs to the trucker.

corridor lacks systematic and effective checks to weigh trucks traveling on its roads. The problem is not the weight of the trucks themselves, but the weight of a given axle on bridges and road surfaces. A heavier truck may do less damage to infrastructure than a lighter one if it spreads its load over a large number of axles. The key factor is a truck's axle weight, which weighing stations can calculate by dividing the gross weight by the number of axles.

Weigh stations exist in Bangladesh, but mostly to establish the weight of goods that a truck carries. Where weigh stations exist to monitor truck overloading, truck drivers suggested that informal payments to the operator can allow the truck to continue unhindered. When penalties are payable, they are not accompanied by a requirement that the excess weight be unloaded. Thus, the message that overloading has dire consequences does not reach the driver or trucker. There is a need for a fully operational protocol requiring payment of fines and a system for offloading the excess weight at the trucker's expense.

Monopolistic Freight Brokerage Services. Interviews with private Bangladeshi stakeholders clarified how the allocation of freight to trucks is organized. When contracting transportation services at Bhomra, for example, the Bangladeshi exporter typically hires a private transportation industry association and pays it for trucking the goods. The association transfers 90% of this payment to the truck owner and retains 10% as its brokerage fee. This payment is very high by international standards and appears to be more of a monopoly rent than a cost-justified fee. The excess charges on this brokerage fee raise the overall cost of transportation on this corridor by about 7–9%. These costs deter both international trade and domestic commerce. Competitive markets for intermediation typically charge 1–3% of the transportation charge for this freight brokerage service, assuming no other services are provided.

Overall, the proportion of small trucks depends on structural variables in the economy. The conditions could improve through incentives and technical assistance, or training in efficient freight load management. The monopolistic allocation of freight is part of a larger problem related to the organization and governance of the road transportation sector. Policy reforms with government and donor participation could help resolve this issue. Axle-weight governance is particularly important, as is setting up a functional system of weigh stations to limit the deterioration of roads and bridges. This could constitute a high-impact intervention for USAID or other donors.

Recommendations

CURRENT SITUATION	INTERVENTION	POTENTIAL IMPLEMENTING PARTNERS
Overloaded trucks accelerate the deterioration of roads and bridges on the two corridors between Kolkata and Dhaka at a cost of hundreds of millions of dollars.	Develop practical protocols to set up a risk-managed sample of trucks weighed at various points along the corridor and enforce fines and offloading of excess cargo.	Ministry of Communication, Roads & Highways Department, truckers' associations and truck-drivers' unions.
Inappropriate truck sizes lead to higher road transportation costs.	Offer technical assistance to value chain exporters to enable them to contract forwarding services more competitively.	Ministry of Communication, Roads & Highways Department, truckers' associations, truck-drivers'

Freight brokerage services charge high monopolistic prices.	Collaboration with truckers' associations and unions related to fleet management, transportation and logistics (T&L) handling, and optimal loads and truck sizes to maximize efficiency.	unions and value chain exporters.

Cross-Border Private-Sector Road Transport Logistics

In principle, private-sector actors have every economic incentive to cross the border as expeditiously as possible to maximize annual load-carrying kilometers. Similarly, they should be incentivized to comply with legal norms and regulations. However, several transportation policy elements, as well as certain private-sector practices, tend to reduce the overall efficiency of the private sector.

Transshipment of goods from a Bangladeshi truck to an Indian truck at the Bhomra-Ghojadanga border crossing.

Photo: CARANA.

First, Bangladesh and India do not have an agreement that allows trucks from one country to haul freight across the border and continue to a final destination. As a result, trucks carrying exports stop at the border and transfer their contents onto a truck from the other country for onward shipment.[72] This requires time (for the trucks from the two countries to liaise and for the transfer of goods) and money (to pay for the labor). There is also the risk of goods being damaged or stolen due to the additional handling, with up to three transshipments occurring for some products, including vegetables. The two countries are negotiating a *Motor Vehicles Agreement* that will allow a vehicle from one country to deliver to a destination in the other.[73] However, it is still not clear if the final agreement will include the right of Bangladeshi trucks delivering freight in India to find a return load for India, and vice versa. Without such permission, the potential efficiency of trucking on this corridor is unresolved since trucks will be forced to return with empty back hauls, which increases the unit costs of transportation. Ideally, the agreement would allow for cabotage, the right of a truck registered in one country to transport goods between two points in another country.

Second, cross-border freight between India and Bangladesh is rarely containerized. Containers are more efficient than bulk shipping because customs in one country can affix a seal that border officials in another should not have to break. However, the type of long-distance trucking made possible by the *Motor Vehicles Agreement* would spur investment in container-enabled trucks.

[72] Indian drivers typically drive from Ghojadanga to Bhomra and park in an un-tarred area a few hundred meters over the border. They wait on average 24 hours until a Bangladeshi truck arrives for a one-hour transshipment (unless there is disruption due to rain) before the cargo continues to its destination in Bangladesh.

[73] "Summary record of India-Bangladesh Commerce Secretary level discussions held at New Delhi on 28th–29th March 2012," p4. http://commerce.nic.in/trade/IndiaBangladeshTalk.pdf

Third, many Bangladeshi trucks headed to the border with India travel empty because of the trade imbalance between the two countries. Greater Bangladeshi export promotion might eventually narrow this trade asymmetry. However, as long as it persists, cheaper back-hauling rates can serve as an additional business incentive for Bangladeshi exporters to India.

Fourth, a railroad linking Dhaka to Kolkata, which is capable of carrying containerized freight, also passes through Benapole and Petrapole. Border processing for trains is faster than for trucks. The railroad competes directly with the few trucks carrying containers between Kolkata and Dhaka, but not the smaller 10–15 MT trucks. Increased container traffic on this rail link would generate greater competition between the two transportation modes and would place downward pressure on road-corridor bribes. This would raise the efficiency of both modes of transportation. The assessment team believes that the provisions of the *Motor Vehicles Agreement* will lead to an efficient private-sector trucking industry able to compete with existing train services. This is based on the transaction costs of transshipping containers from rail to truck at each end of the rail journey.

In summary, the *Motor Vehicles Agreement* has the potential to become a key policy instrument enabling a higher volume of cross-border trade between Bangladesh and India. Once ratified, it will be important to assess whether vested interests will allow trucks from each country to continue to destinations in the other and return with new freight. This would improve corridor efficiency and provide incentives for truckers to invest in bigger trucks. It would also lead to greater containerization of the corridor. Along with the adoption of scanning, risk management and documentary automation by customs, this could greatly increase corridor efficiency. USAID and other donors could play an important role in identifying key players, their vested interests and potential barriers to implementation. By being proactively involved, USAID could help ensure the full application of the agreement.

Road Transport Governance

Discussions with Bangladeshi and Indian drivers revealed that at various points in both countries, truckers hauling domestic and international cargo pay bribes or "unofficial payments" along their routes. Interviews with Bangladeshi truckers suggest they make these informal payments to police officers, unions and ferry staff. However, most bribes are paid to Customs agents and other border officials. Away from the border, truckers reported making informal weekly payments to Bangladeshi police and to ferrymen that secure places for their vehicles on the ferry. It appears that this "streamlined" payment process does not create significant transport delays, although bribes to union officials at road barriers do require trucks to stop each time to pay. Indian drivers interviewed at Bhomra reported making payments within India to "thugs" who they thought might be linked to the police.[74] The extent and mechanisms of this poor road transport governance requires further study.

Bangladeshi drivers reported that they are frequently stopped for bribes along the route from the south and southwest to Chittagong. They reported paying 5 to 7 different police officers, a total of up to BDT 2,000 (USD 25). In addition, they reported paying the union about BDT 500 (USD 6). At the Padma River ferry terminal, they reported paying BDT 200–300 (USD 2–4) to locals, on top of those paid to the ferrymen. The legal load limit is 10 MT, but drivers typically carry 15–20 MT, bribing everyone along the way who checks.[75] This costs an additional BDT 2,000 (USD 25). Informal payments thus amount to about BDT 5,000 (USD 62). This figure does not take into account the value of time wasted along the

[74] Indian drivers interviewed at Ghojadanga said that the Indian legal weight limit on truck cargo is 10 MT, but they typically carry about 20 MT. If caught, they are liable to pay an official fine of INR 30,000 (USD 550). In this case, there is no way to bribe one's way out. However, Indian authorities rarely check for overage.

[75] Those tasked with weighing trucks do not do so to control overloading, but to assess the weight of cargo as an anti-theft measure.

route paying the bribes. The direct financial costs from these transactions, added to the costs associated with the time delays, serve as effective "taxes" on domestic commerce and international trade along these corridors.

Poor road transport governance in Bangladesh and India is distinct from the governance issues involved in crossing their mutual borders, as we discuss in Chapter IV. However, in terms of the efficiency of the corridors from Khulna-Kolkata or Jessore-Kolkata, this phenomenon is an additional constraint on international trade between the two countries. Without a systematic assessment of the relative importance of excess border-related costs versus domestic road transport corruption costs, poor domestic governance should also be considered as one of the major constraints to trade. The assessment team therefore recommends provisionally including domestic transportation issues in the analysis about governance issues at the border.

Recommendation

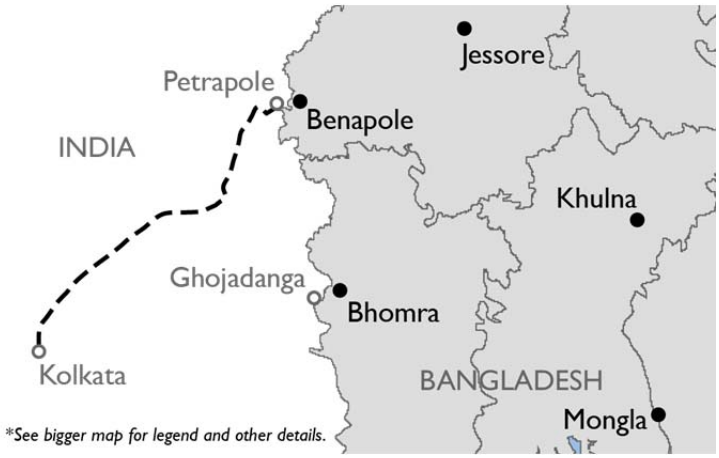
CURRENT SITUATION	INTERVENTION	POTENTIAL IMPLEMENTING PARTNERS
Roadside corruption on both the Bangladeshi and Indian sides of the border leads to excess transportation costs and delays. It serves as an effective tax on both domestic commerce and international trade with India.	Work with the Ministry of Communication, truckers' associations and export traders to document the frequency and financial impact of roadside hassles and corruption. This could include the entire Dhaka-Kolkata road corridor.	Ministry of Communication, Roads & Highways Department, truckers' associations and truck-drivers' unions.
Inefficient road-corridor performance between Dhaka and Kolkata.	A comprehensive set of activities to benchmark and monitor corridor and clearance inefficiencies, relying on private-sector advocacy to target and press for reforms to eliminate bottlenecks.	ADB, Customs and other border services in Bangladesh and India, Bangladesh Land Port Authority (and its Indian counterpart), private-sector truckers' associations and drivers' unions.

RAIL

Rail should be the preferred means to ship bulk commodities and other non-urgent goods. However, it is inherently a less flexible transportation mode than road. In addition, the Bangladeshi network reaches fewer parts of the FTF zone than the road network. Rail connectivity in the SSW suffers from the same problem as the road network: the absence of a trans-Padma bridge linking it to Dhaka, Chittagong and the rest of central and eastern Bangladesh. In addition, rail does not serve Mongla Port, stopping at Khulna, 53 km away (see Map 4). This is a limiting factor for exports from the FTF zone. More generally, the rail network is old, slow and accident-prone. It would require significant investment to remedy these problems, some of which is already being provided by lenders such as the Asian Development Bank (ADB) and the Government of India.

Still, there are signs of improvement. Train services along the Jessore-Kolkata line through the Benapole-Petrapole border ceased after the 1965 Indo-Pakistani war. Trans-border rail traffic resumed in 2001, reaching peaks of 370,000 MT in 2002–2003 and 245,000 MT in 2007–2008. Shipments have since dropped to 88,000 MT in 2011-2012 due to falling demand and competition from alternative modes of transport.[76]

Map 4 – Rail between Benapole and Kolkata.



During a field visit in September 2012, the assessment team noted little rail activity at Benapole. According to Bangladeshi freight forwarders, only a small volume of freight transits through Benapole by rail. About 60–100 wagons arrive monthly. Freight forwarders suggested the low demand for rail along this corridor could be attributed to several factors: physical infrastructure barriers to loading and unloading rail at the port; the 20–30 days' advance notice required to book a train; and shippers' uncertainty about whether they will actually receive the number of wagons requested ("if you book 20 wagons, you may only receive 15").

In April 2012, the GOB officially requested the Government of India to help support the rail corridor from Khulna to Kolkata.[77] The Government of India agreed to provide a concessional loan to Bangladesh toward the construction of a 53-km extension of the rail line beyond Khulna to Mongla Port (see Map 5). This will increase port traffic at Mongla and reduce congestion at Chittagong Port.[78] Bangladesh Railways also plans to build new rail links promoting economic development in the south and southwest: (a) from Dhaka to Mawa (to link to the proposed Padma bridge connecting the SSW to Dhaka)[79] (b) from Mawa to Bhanga[80] (c) from Bhanga to Barisal[81] and (d) from Navaran

Map 5 – Planned rail link between Khulna and Mongla Port alongside existing road.

[76] Western Bangladesh and most of India share a common railway gauge (5ft 6in) that could expand trade by rail. This is not true for regions of Bangladesh east of the Padma River.
[77] Bangladesh Railway, Status of train operation at Benapole station, Monograph.
[78] Bangladesh Railway, Project brief on construction of Khulna-Mongla Port rail line including feasibility study, Monograph.
[79] Bangladesh Railways, Project summary of Dhaka-Mawa rail link, Monograph.
[80] Bangladesh Railways, Project summary of Bhanga-Mawa rail link, Monograph.
[81] Bangladesh Railways, Summary of Bhanga-Barisal rail link, Monograph.

to Munsiganj via Satkhira.[82] However, none of these plans has funding.[83] At the same time, ADB is funding a USD 4.5 billion project to promote transportation systems in South Asia, in which Bangladesh's rail network plays a potentially important part.

There are also plans for a South Asian Association for Regional Cooperation (SAARC) railway agreement to facilitate the development of regional rail projects. In August of 2011 experts finalized the wording of the Regional Railways Agreement and prepared plans for a test run of commercial rail cargo from Bangladesh to Nepal via India. [84] At the 17th SAARC summit in November 2011 it was agreed that the Regional Railways Agreement would be concluded and the demonstration run completed before the 18th summit scheduled for May 2013. [85] However, there is no evidence that either the test run or the agreement was completed in 2012, and the 18th SAARC summit has been postponed. [86] Despite these setbacks, as of December 2012 SAARC's Secretary General stated that SAARC was 'vigorously pursuing the finalization of the Regional Railways Agreement'.[87]

Transferring newly bagged wheat from one ship to another at Mongla Port.

Bangladesh's rail infrastructure is still being rehabilitated after a long period of neglect. International development banks such as ADB and the World Bank are potential donors for the scale of project financing required. If Mongla Port is connected to the national and regional network, and as traffic grows from Kolkata to Jessore/Dhaka and to Khulna/Mongla, there may be opportunities for USAID to support trade-related activities that complement ADB and World Bank infrastructure programs.

MONGLA PORT

Mongla Port lies at the convergence of the Pasur River and Mongla channel, about 130 km north of the Bay of Bengal. Bangladesh's second port after Chittagong, Mongla currently handles only 15% of the country's total maritime trade.[88] This is largely due to the silting of the Pasur River, which limits jetty

Photo: CARANA.

[82] Bangladesh Railways, Summary of Naravan to Munsiganj via Satkhira rail link, Monograph.
[83] In 2010, India announced it would extend its railway network to an additional two points along the Indo-Bangladeshi border by 2014. However, both of the sites lie on Bangladesh's eastern border with India's Tripura State. *Sinlung*, February 12, 2010: http://www.sinlung.com/2010/02/india-to-expand-rail-network-along.html
[84] SAARC 2011. 'Address by Her Excellency Sheik Hasina, Hon'ble Prime Minister, People's Republic of Bangladesh, at the Seventeenth SAARC Summit (Addu, Maldives; 10 November 2011)' November 12 http://www.saarc-sec.org/statements/Address-by-Her-Excellency-Sheikh-Hasina-Honble-Prime-Minister-Peoples-Republic-of-Bangladesh-at-the-Seventeenth-SAARC-Summit-Addu-Maldives-10-November-2011/14/
[85] SAARC 2012. 'Seventeenth SAARC summit: Addu declaration – "building bridges"', February 15 http://www.saarc-sec.org/2012/02/15/news/Declaration-of-the-Seventeenth-SAARC-Summit/87/
[86] Republica, 2012. '18th SAARC summit to be deferred' Oct 5, http://www.myrepublica.com/portal/index.php?action=news_details&news_id=42989
[87] SAARC, 2012. 'Message from SAARC Secretary General on the occasion of 28th SAARC Charter Day' December 11 http://www.saarc-sec.org/press-releases/Message-from-SAARC-Secretary-General-on-the-occasion-of-28th-SAARC-Charter-Day/39/
[88] GOB, Planning Commission, Physical Infrastructure Division, Development of transport corridor(s) for trade facilitation, Phase 1 Report, Volume 1, July 2007.

access to ships with drafts[89] of 6.5 meters or less at the jetty, compared to drafts of 8.0–9.5 meters at Kolkata Port in India.

The chief exports at the port are jute[90], frozen fish and frozen shrimp. Mongla Port Authority (MPA) noted that exports of these products through Mongla are rising. Bulk commodities, including cement, fertilizer, coal and wood pulp, account for 90% of total imports, mostly from India. The assessment team saw stevedores (dockworkers) bagging wheat in a ship from Kolkata and transferring the sacks into barges to convey them to river ports such as Nowapara, about 65 km upstream. Much of the agricultural sector in south and southwest Bangladesh receives its fertilizer via a similar transport and logistics process. Although Mongla Port can handle one container vessel per day, the boats arrive once a week as part of a single circuit that includes Singapore and Chittagong. In 2010–11, the port used only 54% of its container-handling capacity and 42% of its capacity for other goods.[91]

Cranes from the 1980s remain unused at Mongla Port due to low traffic.

Photo: CARANA.

A poor-quality road connects Mongla Port to the divisional capital, Khulna, 50 km to the north. Construction is underway on a new road that the MPA says will allow the port to be served by 40–50 MT trucks, rather than the 10–20 MT trucks used now.

Bangladesh's rail network currently stops at Khulna. As noted above, India has made a concessional loan available to extend the rail connection to the port. The MPA chairman estimated that this would be finished within 1.5 years, though this seems overly optimistic.

Linking Mongla Port to the rest of the Bangladeshi rail network will improve trade, particularly from the SSW. It is also part of a larger sub-regional export promotion plan based on the fact that the western half of Bangladesh uses the same rail gauge as India. Nepal and parts of India stand to benefit from a cheaper route to world markets if they can trade through Mongla Port. ADB is currently undertaking a feasibility study to examine the potential role of the port in stimulating sub-regional trade.

The port itself faces significant challenges. Equipment is old and basic, though functional. For instance, there is no dedicated cold-storage equipment other than electrical hookups for the refrigerated trucks (reefers) that come in with loads for shipping. Customs and other port officials, as well as freight forwarders, have no accommodation at Mongla and must commute from Khulna. Meanwhile, the stevedores' unions have an activist reputation.[92]

[89] "Draft" means the vertical distance from the water to the lowest part of the vessel.
[90] A presentation at MPA noted exports of 27,000 MT of raw jute and 63,000 MT of jute goods in 2011.
[91] Priyo News, "Mandatory use of Mongla port for govt imports under study," December 28, 2011, http://news.priyo.com/business/2011/12/28/mandatory-use-mongla-port-govt-44655.html [The MPA said this figure was 60% in September 2012.]
[92] The Mongla Port Authority chairman described the three trade unions as 'bad news' in the past.

The GOB has developed an Export Processing Zone (EPZ) adjacent to Mongla Port. A total of 100 of the 124 plots have already been leased to Bangladeshi and foreign-Bangladeshi joint ventures. The representative of a Chinese company cited the good EPZ facilities and cheap labor as the main reasons for locating a production unit there. The Mongla EPZ also charges lower rents than other free zones in Bangladesh. The assessment team observed newly built jute product factories within the EPZ.

If the GOB manages to increase overall freight volume (inbound and outbound) at Mongla Port, this will have a beneficial spillover effect on exports from the SSW region. Greater traffic will lead to more frequent container-ship service and additional port destinations served directly from Mongla. Some exporters of jute and shrimp from the SSW currently export via Chittagong Port because of the range of destinations available and timeliness to market. If Mongla Port could provide comparable services, it would spare exporters the 700 km journey. Processing of agricultural products at the EPZ area would also open new prospects for higher value-added exports from the SSW region.

Although the GOB has coherent plans to improve the efficiency of trade through Mongla Port and the SSW rail network, it still has to complete the investments that will fulfill its vision. Most of these investments are likely to be on a scale that only multilateral development banks such as ADB and the World Bank can meet. However, "soft infrastructure" elements, such as technical assistance or electronic clearance equipment for the port to reduce the cost and time taken for exports (and imports), are areas where USAID can support port development. The ADB feasibility study should cover these areas and will probably reveal gaps in port modernization efforts that may require supplemental assistance.

Recommendation

CURRENT SITUATION	INTERVENTION	POTENTIAL IMPLEMENTING PARTNERS
Uncertainty about the timing of the various planned port improvements.	Study the ADB feasibility study (in progress in September 2012) with stakeholders to look for unfunded elements with potential to increase exports from the SSW region.	ADB, MPA, Customs, freight forwarders, and shrimp, fish and jute exporters.

DHAKA SHAHJALAL AIRPORT

Exports of vegetables, cut flowers, live fish, live crabs and leather/hides are part of the 500 MT of daily air freight at Dhaka's Hazrat Shahjalal International Airport, along with nonagricultural exports such as RMGs and pharmaceuticals. One of the major constraints to air-freighted exports is the fact that Biman Bangladesh Airlines, the national carrier, does not have dedicated cargo planes. Instead, it uses hold space in passenger aircraft. Biman also relies on cargo space in ten other airlines serving Dhaka. However, the absence of regular cargo service is a major limiting factor to the volume of air-freighted exports.

Biman only accepts perishable cargo on the day of departure, sometimes with as little as four hours' notice. For instance, flowers from Jessore typically arrive in Dhaka at midnight. They are sold at auction in the morning and leave on the evening flight later that day. If the merchandise cannot be shipped by air, the exporter is forced to sell it on the Bangladeshi market at a discount. Packaging, cold chains and timing/logistics are key factors in this industry. Inside the airport, there is a small cold room for the 2–3

hour transition required for document processing[93] and the loading of the aircraft. For various reasons, Biman is not always able to load air cargo onto its planes. In addition, air cargo has a high track record of losses. According to Biman, the mortality rate for live crabs flown to China stands at 30%. To expand exports by air requires a much larger air-cargo facility and cold storage terminal, as well as improved handling and logistics. Equally important is the certainty of freight access to dedicated cargo planes.

The current improvised system for air freight makes outbound shipments an uncertain proposition, especially when high-value goods like pharmaceuticals compete with lower-value goods such as fresh vegetables. Flower exporters cannot guarantee that their overseas customers will receive a shipment on a particular day. If there were a predictable volume that airlines could count on when flying out of Dhaka, a dedicated charter plane could be used. That plane could then head to a regional hub such as Dubai where goods are forwarded to additional destinations via commercial airlines.

The cargo terminal at Shahjalal airport dates to 1980 and the cold storage room was built around 2000. Both are obsolete and inadequate. Despite the limitations of physical infrastructure, Biman is forecasting that air-cargo freight volumes will triple over the next five years. The Civil Aviation Authority (CAA) is actively planning to develop a new cargo area within the airport. According to Biman officials, the CAA is likely to participate in a public-private partnership (PPP) to undertake this project. Biman sees itself as the handling agent for the future cargo facility, but not a part of the PPP.

High-value exports from Jessore District, especially cut flowers, could also benefit from a regular air feeder service from Jessore to Dhaka for onward shipment to markets such as Dubai. This would increase product freshness and value. If there are predictable volumes, specialized reusable containers could be used to reduce damage and waste. Some of the larger export trading houses and intermediaries in Dhaka might be interested in setting up a partnership. However, Jessore airport has a short runway and an F28 aircraft with a payload of 5–10 MT would be the maximum allowed. Otherwise, two passenger carriers from Jessore to Dhaka have cargo space available, but the hold volume on their planes is significantly less. Biman officials suggested that feeder air shipments of cut flowers from Jessore to Dhaka might be profitable, but that vegetables are less risky and do not require a dedicated feeder service.

Air shipments are necessary for high-value exports. The potential volume of these new exports has outgrown the obsolete air-cargo facilities at Dhaka airport. It is possible that the CAA may participate in a PPP to develop such a facility. However, the private sector often invests in and operates such facilities in other countries. With good logistics and appropriate controls, there is no need for such a facility to lie within the airport grounds if other factors suggest a nearby location. It would also be preferable to structure new air-export capacity in ways that generate competition in ground handling. In a separate but related matter, a detailed feasibility study should determine the conditions under which the high value-added flower exports would support an air-feeder service from Jessore to Dhaka.

[93] Team members did not speak with Customs or phytosanitary personnel at the airport. However, if the export clearance can be done in four hours, it is unlikely that they impose a great burden on exports.

Recommendations

CURRENT SITUATION	INTERVENTION	POTENTIAL IMPLEMENTING PARTNERS
Lack of an efficient air-cargo facility at Dhaka's Shahjalal Airport to take advantage of the expansion of air-freighted exports.	Facilitate an alliance to undertake studies with the goal of building and operating an air-cargo facility at (or near) Dhaka's Shahjalal Airport, as well as chartering cargo planes on a regular basis.	Export Promotion Bureau, Civil Aviation Authority, Biman Bangladesh Airlines, Federation of Bangladesh Chambers of Commerce and Industry and.
Uncertainty about the profitability of an air-feeder service from Jessore to Dhaka.	Commission a study to determine the conditions for profitability.	Dhaka trading houses and a logistics company.

MOBILE COMMUNICATIONS

There is significant interest in the opportunities that mobile telecommunications can provide to address some of the most challenging problems in development. Mobile-handset penetration now reaches into all levels of Bangladeshi society, with a reported 80% of farmers having access to a mobile phone.[94] Most of these phones are still the 2G text-based handsets, but 3G telephony is beginning to expand as the network is developed. Although originally designed for telephone calls, mobile handsets have become powerful business and development tools. The London Business School released a study in 2005 that showed GDP growth of 0.6% in a typical developing country for each increase of 10 mobile phones for every 100 people in the country.[95]

Nowhere have mobile phones made more of an impact on improving the lives of mobile users than in agriculture in developing countries. Africa and East Asia were the early adopters of mobile technology. Now the trend is pervasive worldwide and South Asia, particularly India, is rapidly integrating mobile technology with agriculture and rural development.

Mobile phone technology could prove to be a valuable resource for Bangladeshi farmers. These farmers[96] face a number of challenges, including when to grow the right crops under the right conditions and when to sell them at the best price. The assessment team identified a number of factors, including:

1. Poorly informed farming practices in combination with the GOB's limited agronomic resources available to advise farmers. The GOB extension-agent system works with individual farmers to teach them best practices. But with high farmer-to-agent ratios, it is difficult to relay key information to farmers.

2. Limited market information available for farmers when they sell crops. Farmers must often sell to the nearest market regardless of prices offered, leaving them with little bargaining power.

[94] Interviews with officials in the field.
[95] Waverman, L. et al. "The impact of telecoms on economic growth in developing countries," in *Africa: the impact of mobile phones*, Vodaphone Policy Paper series, no.2, March 2005.
[96] In this section, 'farmers' refers to those producing all value-chain products studied in this paper: jute, floriculture, horticulture, aquaculture and coir.

The Bangladesh Institute of ICT in Development (BIID), an NGO that began in 2008, has been working with stakeholders to expand mobile-technology throughout Bangladesh. They began a program in association with Grameenphone called eKrishok. The electronic forum offers farmers a paid service via SMS or telephone call related to their crops or the market. One of the lessons from eKrishok is that farmers are reluctant to pay for one-off mobile services. However, they are willing to pay for subscriptions for useful and timely information.

The BIID has also developed programs to support farm customers by offering a suite of customer care and extension services for a fee. It also plans to launch an electronic commodity exchange (ECE) designed to link farmers to commodity markets. The ECE would be aimed at tech-savvy farmers and those who purchase larger quantities of farm inputs. This electronic platform could be tailored to provide market-linkage applications for farms of all sizes.

OPPORTUNITIES FOR IMPACT

The introduction and expansion of mobile applications for agriculture worldwide offers a useful model for Bangladesh. Below are opportunities that could impact on the agriculture and aquaculture sectors.

The development of a database to aggregate problems that are reported to eKrishok and similar services could be coupled with trending technology to determine developments in disparate regions of the country. These in turn could be related to technical and operational challenges, market disconnects and viruses. Such applications could help improve farmer productivity at both the local and national level.

Introducing a pilot program based on the Grameen Foundation's Community Knowledge Worker program deployed in Uganda, Ghana and Indonesia could also improve the dissemination of information.[97] The pilot could take advantage of an existing program in Khulna District that clusters female shrimp farmers. The women have realized that if they connect regularly, both for training and to exchange information, they can learn from one another and solve problems. The clusters are arranged in groups of 25 women farmers, with one person acting as team leader.

Mobile services and applications that allow farmers to know the current prices at nearby markets can help them obtain better prices for their crops. In 2007, Telenor Pakistan and Grameenphone teamed up to provide farmer customers in North Bengal Region with the prices for agricultural products. They were taught where to consult for the best prices through the Agriculture Commodity Trade (ACT) project. ACT is also active in Pakistan, where feedback has been positive. The project has continued to evolve and now includes market information for agricultural inputs, as well as plans for extension services. In addition, ACT plans to introduce mobile banking services to its customers.[98] However, the assessment team came across no such initiative for farmers in SSW Bangladesh.

As an example of the potential impact of market information systems on small farmers, it is worth highlighting the case study in the aquaculture section of this report (see Annex 2). The farmer profiled there sells his harvest of 120 kg of *Golda* shrimp for BDT 750 (USD 9) per kg for a total of BDT 90,000 (USD 1,108). After paying for the lease on the land, his stock and feed, he is left with BDT 25,500 (USD

[97] The Community Knowledge Worker (CKW) is a member of the rural community that acts as a trusted intermediary who uses mobile technology (phones and tablets). They provide information services to farmers by collecting information about crops, diseases and markets. The CKW can help locate the nearest input supplier, obtain recommendations on the proper use of fertilizers and chemicals, and find the best market prices.

[98] Telenor Group, *Farmers cut a better deal with their mobile phones*, July 3, 2012, http://telenor.com/corporate-responsibility/initiatives-worldwide/farmers-cut-a-better-deal-with-their-mobile-phones/

314). The farmer said he had long wanted to lease more land and had been offered a similar-sized plot next to his current plot. However, he did not make enough to save money to lease additional property.

If the farmer could access a market information system via his mobile handset to sell his harvest for even 10% more than what he currently earns, his annual income would increase to BDT 99,000 (USD 1,219). After two years, he would have enough money saved to lease one more plot of land, effectively doubling his annual income. After one year of farming the two plots, he would have the resources to lease a third plot of land, putting him in a new economic reality.

Tailoring a mobile 3G farmer information system (FIS) to the needs of jute producers in SSW Bangladesh could help improve farmer knowledge. The rapid spread of 3G networks and handsets, now priced below USD 50 and quickly dropping to USD 30, has led to the development of mobile 3G FISs that employ user-generated data. They run on mobile broadband devices to connect farmers, local governments and merchants. Applications of such a system might include:

- Market pricing – Displays crop pricing information by grade of raw jute in real-time with the ability to communicate with merchants remotely.
- Availability of quality seed – Provides details of likely yields and quality, inputs needed, place and date of sale, and price for improved jute seed.
- Farming techniques and training – Dashboards and how-to videos that teach farmers best practices for planting, pest/disease control, harvesting and retting the jute.
- Forecasting analysis – Suggestions from the Bangladesh Jute Research Institute (BJRI) on growing strategies based on weather conditions and pricing trends.

Mill owners would have an incentive to contribute to a Southern Bangladesh Jute Information System and thus reach potential clients for the purchase of quality jute. They might want to be perceived as contributing to corporate social responsibility or may want to advertise on the system. The BJRI could support such a system because it would allow them to reach more farmers than current extension campaigns.

MOBILE TELEPHONY RECOMMENDATIONS		
Bangladeshi farmers of export commodities often incur losses because of insufficient price and market information that would allow them to increase sales and profitability.	Launch a pilot project in a specific district of the SSW that addresses key information gaps through mobile technology.	ACT project.

IV. TRADE POLICY, TRADE FACILITATION AND STANDARDS

In this chapter, we examine Bangladesh's trade policies and those of its trading partners, focusing on important markets for the products produced in the FTF region. For the trade policy discussion, we focus especially on policies that affect trade between Bangladesh and India, including export incentives and subsidies, import restrictions on competing goods, and quantitative restrictions on exports of unprocessed or semi-processed products that Bangladesh wishes to retain for higher-value domestic processing. We also discuss Customs and other border clearance issues, as well as standards and conformity.

TRADE POLICY

TRADE AGREEMENTS AND TRADE PREFERENCES

Bangladeshi products generally face low duties in both developed and developing markets, largely as a result of regional and global trade agreements. In addition, Bangladesh is eligible for trade preferences as a least-developed country (LDC). The country is a founding member of the World Trade Organization (WTO). It therefore receives at least most-favored nation (MFN) treatment from fellow WTO members, which it applies in turn to imports from WTO members.

In the last decade, Bangladesh has also become a party to a number of regional trade and economic agreements. These include the South Asian Free Trade Area (SAFTA), the Asia-Pacific Trade Agreement (APTA) and the Bay of Bengal Initiative for Multi-Sectoral, Technical and Economic Cooperation (BIMSTEC).

SAFTA came into force in 2006. Its signatories (Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka) see the organization as a precursor to a customs union, a common market and economic union. SAFTA's goal is to promote and enhance mutual trade and economic cooperation between member states.[99] In August 2012, India removed all but 25 products on its 'sensitive list' of higher-duty products imported from SAFTA's LDCs, including Bangladesh.[100] Under SAFTA, Bangladesh has reduced its applied tariffs from the rate applied in January 2006. This rate currently stands at 11.7%, compared to the averaged applied MFN rate for non-SAFTA countries of 14.9%.[101] India's average MFN duty rate is 12%. Under SAFTA, the average tariff rates are 8.9% and just 2.3% for LDCs. However, duty rates are substantially higher for imported agricultural products. For these, India's MFN average duty rate is 33.2%. SAFTA parties receive a preference relative to this rate, particularly the LDCs. But the average duty is still 15% on agricultural goods from LDCs who are SAFTA parties.[102]

Bangladesh also receives unilateral trade preferences as an LDC under the Generalized System of Preferences (GSP). The GSP provides for trade preferences in almost all developed members of the WTO. Bangladeshi producers also enjoy trade preferences in China and India. In the European Union, Bangladeshi goods receive duty-free and quota-free access, mainly through the Everything But Arms

[99] Agreement on South Asian Free Trade Area (SAFTA), p. 2, http://www.saarc-sec.org/uploads/document/SAFTA%20AGREEMENT_20110811115331.pdf
[100] "Increasing regional trade: India shortens sensitive list", *The Daily Star*, August 18, 2012.
[101] World Trade Organization (WTO), Trade Policy Review (TPR): Bangladesh, November 26, 2012, p. 39.
[102] WTO, TPR, Memorandum for India, October 20, 2011, p. 49.

Initiative (EBA). In the US market, certain Bangladeshi goods qualify for the US Generalized System of Preferences. Japan accords Bangladeshi imports duty-free and quota-free access for nearly all tariff lines. Many of these trade preference programs are especially significant to Bangladeshi exports of apparel. But they also have relevance to prospective exports of agricultural and agro-industrial products.

Nonetheless, Bangladeshi products still face significant tariffs in major export markets for agricultural products. The top five export markets for Bangladeshi agricultural goods (India, EU, Nigeria, China and US), accounted for USD 150 million of Bangladesh's agricultural exports in 2010.

- **India.** Bangladeshi exports of agricultural products (USD 45 million in 2010, primarily fish and crustaceans, fruits and nuts, and hides and leather) encounter fairly steep tariffs in India, where Bangladesh's trade-weighted average tariffs are 13.2%, a margin of preference of 10.4% over imports from other countries not qualifying for preferential treatment. Only 36.5% of Bangladeshi exports of agricultural goods can enter India duty-free.
- **European Union.** All of Bangladesh's agricultural exports to the EU (USD 45 million in 2010, mostly fish and crustaceans) enter duty-free. This provides a margin of preference of 11% over imports from other countries not eligible for the EBA program.
- **Nigeria.** Nigeria is Bangladesh's 3rd-largest export market for agricultural products (USD 32 million in 2010, mostly herbs and spices). Bangladeshi agricultural goods face a 19.4% trade-weighted average duty in Nigeria and do not have any margin of preference over other suppliers. None of Bangladesh's exports to Nigeria enter duty-free.
- **China.** In China, which imported USD 17 million worth of Bangladeshi agricultural goods in 2010 (mostly hides and leather, and fish and crustaceans), exports from Bangladesh enjoy only a very slight margin of preference (0.6%) over other suppliers. A miniscule amount of its agricultural exports enter China duty-free. The average weighted duty on Bangladesh's agricultural exports to China is 9.4%.
- **United States.** The US also bought USD 17 million of Bangladeshi agricultural exports in 2010 (mostly fish and crustaceans). Nearly 94% of these goods entered the US duty-free. However, the weighted average US tariff on imports of agricultural goods from Bangladesh was 24.5% and exporters enjoyed only a 4.2% margin of preference in the US market as compared to non-LDC suppliers.

On the import side, high import duties on intermediate goods (along with other surcharges) can have a significant impact on the price competitiveness of Bangladeshi exports that require imported inputs.[103] However, in the targeted Bangladeshi value chains (VCs), the utilization of intermediates is generally very low. Thus, Bangladesh's relatively high import duties are not a significant factor with respect to the export opportunities and challenges in these sectors. For the targeted VCs, nearly all production is based on predominantly domestic inputs. Bangladesh's average applied duty on electrical machinery is 13.8% and the applied average duty on transportation equipment is 12.8%. These relatively high tariffs could elevate production and transportation prices for exports from the SSW region of Bangladesh.

EXPORT POLICY FOR TARGETED AGRICULTURAL SECTORS

A key component of Bangladesh's export policy in the last decade has been the use of cash incentives to promote certain agricultural exports. The scheme was initially introduced to assist exports of locally manufactured jute products and other textiles. It has progressively increased in scope (number of products as well as cash outlays). Since 2002–2003, it includes frozen shrimp and other fish, fruits and vegetables, as well as processed agro-products. Potatoes were added in 2004, followed by hatching eggs

[103] This is particularly true in the apparel industry, in which imported intermediate goods account for 60% of the value of Bangladeshi exports.

and day-old chicks in 2005. These incentives are allowed under Article 9.4 of the WTO Agreement on Agriculture, as indicated in the WTO Trade Policy Review (TPR) for Bangladesh.[104] The incentive varies by product and over time, ranging from 3% to 20%.

These agricultural export sectors are further protected with high import tariffs on frozen shrimp and fish, as well as on jute. Tariffs are also high for vegetables, fruits, nuts and spices, all of which are import-substitution crops.

This combination of export cash incentives, import restrictions and bans on exports of low-value products in high-priority sectors has led to significant growth in supported export sectors, especially shrimp and vegetables. They have also benefited from subsidized freight charges and subsidies for expanded processing capacity, as well as improvements in standards compliance and product quality.[105]

The 2009–2012 Export Policy identifies a number of additional measures to develop the shrimp industry, including the use of venture capital to produce, process and export value-added products in the frozen-foods sector. Another initiative seeks to establish a "quality seal" for organizations under a public-private partnership (PPP), the creation of an accredited testing laboratory (also through a PPP initiative) and the establishment of private-sector laboratories. The policy directive will also permit imports of machinery needed to elevate quality control in frozen foods. Meanwhile, the Department of Fisheries is taking steps to improve its testing laboratories and the traceability system for the production, processing and packaging of fish.

As for manufacturing, a sector in which Bangladesh seeks to grow and diversify by 2021 under the New Industrial Policy (2010), the Export Policy identifies special development sectors with export potential, but where production, supply and the export base are not currently consolidated. These include crushed and finished leather production, frozen-fish production and processing, handicrafts, electric/electronic products, fresh flowers and foliage, as well as jute and jute products. The benefits of priority designation for these sectors consist of soft export loans, subsidies consistent with WTO rules, shipments at reduced air-freight rates, expansion of facilities to improve and control production quality, and assistance in the marketing to foreign buyers. They also cover special rates for utilities and foreign investment incentives.[106]

[104] WTO, TPR: Bangladesh, November 26, 2012, p. 79.
[105] Ibid., p. 79–80.
[106] Ibid., p. 82–83.

Recommendations

CURRENT SITUATION	INTERVENTION	POTENTIAL IMPLEMENTING PARTNERS
Exported Bangladeshi agricultural products face high duties in some major import markets. The country does not always have a trade preference (margin of preference) compared to other competing suppliers to those markets.	Conduct a detailed product-by-product market access assessment for leading products from the SSW region (broader than our priority value chains). The study would **identify specific products that enjoy a tariff preference in a given market** as a **priority for marketing** by Bangladeshi exporters.	Ministry of Commerce, WTO and ITC Geneva.
	Conduct a detailed product-by-product market access assessment for leading products from the SSW region (broader than our priority value chains). The study would **identify specific products that face high tariffs in a target market and support Bangladeshi efforts to negotiate a reduction in the tariff rate.**	
Bangladesh imposes relatively high import duties on machinery and equipment, including transportation equipment.	Conduct a detailed product-by-product assessment of Bangladesh's import duties and other surcharges on imports essential to the production of agricultural products important to the VCs in the SSW region. Calculate an effective rate of protection for each VC. Convince the Bangladesh Ministry of Commerce of the deleterious impact on export promotion of maintaining high import duties on relevant equipment.	Ministry of Commerce, WTO and ITC Geneva.

TRADE FACILITATION

TRADE DELAYS AS A BARRIER TO EXPORT COMPETITIVENESS

Despite the fact that India's merchandise imports from Bangladesh in 2009–2011 grew faster than flows of goods in the opposite direction in value terms[107], many observers argue that Bangladesh does not benefit as much from the tariff reductions India instituted under SAFTA. Some influential GOB officials, including the Commerce Secretary and the Joint Chief of the Bangladesh Tariff Commission, suggested that a focus on increasing trade facilitation[108] and reducing non-tariff barriers (NTBs) will generate greater benefits for Bangladesh than establishing a free-trade agreement with India.[109] The World Bank concurs: 'There is no compelling case for India and Bangladesh to pursue a bilateral Free Trade Agreement…A broader-based liberalization would be more beneficial for both countries'. To this end, a

[107] The value of India's merchandise imports from Bangladesh increased from USD 234 million to USD 579 million (147%) in 2009–2011. Meanwhile, the value of India's merchandise exports to Bangladesh rose from USD 2.2 billion to USD 3.4 billion (56%). http://www.trademap.org/tradestat/Bilateral_TS.aspx

[108] Trade facilitation is the reduction in cost and time required for trade flows by increasing logistical efficiency and enhancing transportation infrastructure, border administration and good governance.

[109] "Doubt over benefits of FTA with India," *The Daily Star*, August 3, 2012. http://www.thedailystar.net/newDesign/news-details.php?nid=244613

meeting of the Prime Ministers of India and Bangladesh in 2011 resulted in a framework agreement on development that included border management and infrastructure construction.[110]

Trade delays in South Asia are significant. They affect Bangladeshi exports and imports, elevating costs and hindering competitiveness. Although specific data on delays at land, sea and airports in the SSW region are not available, interviews there reinforced the belief that Customs, border clearance and transportation bottlenecks were at least as long as those recorded at Bangladesh's largest seaport, Chittagong.

According to the World Bank's Trading Across Borders (TAB) indicator, a subset of the Doing Business (DB) Report, the 2013 index ranked Bangladesh 119th out of 185 countries in terms of time and cost of exporting and importing goods. Exports took a total of 25 days for the various documents and processes to be completed, whereas imports took even longer, a total of 34 days. The greatest delays were in the documents required, not in border clearance procedures. For exports, document preparation took 14 days and another 22 days for imports. Customs clearance required 3 days for either imports or exports, as measured at Chittagong Port. The time frames were likely longer in smaller ports, including land ports. Dwell time at the port was 5 days for exports and another 7 days for imports. Anecdotal evidence suggested substantially longer delays at land ports. Inland transportation and handling required an additional 3 days for exports and 2 days for imports. Overall, the time required for goods to undergo all necessary export and import procedures in Bangladesh exceeded the South Asian average of 33 days. It also exceeded the sub-Saharan African average of 31 days (for exports), although Bangladesh performed better than sub-Saharan Africa on import time. Bangladesh's time in trade is more than three times the OECD average.[111]

These delays can be assigned a monetary value. An influential study by USAID in 2007 noted that the tariff equivalent of trade delays in South Asia stood at 28.5%, compared with an average tariff rate for imports into South Asia of 25.5%.[112] Indian tariffs on imports from Bangladesh have since fallen, so the relative importance of delays as compared to tariffs is now likely even greater than it was in 2007. Thus, trade delays are more economically important than directly measurable import tariffs. In fact, they may be more important than any other cost variable in the production value chain. The delays obviously have a greater impact for perishable products than for nonperishables. A time-delay study would allow such assertions to be substantiated and would help focus future assistance on the sub-elements of delays for each value chain, directing resources where they will have the greatest impact.

Although Bangladeshi policymakers have emphasized the need to reduce India's tariff and nontariff barriers, which we define as including trade delays, there is scope for improvement on the Bangladeshi side of the border as well. This chapter will assess the constraints evident within Bangladesh that hinder agribusiness exports from the SSW.[113]

[110] Bagchi, I., "Manmohan Singh, Sheikh Hasina put Teesta behind, fix boundary," *Times of India*, September 7, 2011.
[111] www.doingbusiness.org; accessed 12/12/12. World Bank, Doing Business (DB) Report, 2013.
[112] Hummels, D., "Calculating Tariff Equivalents for Time in Trade," USAID, March 2007.
[113] Information on opportunities for trade facilitation in India sometimes became available during the mission. But the assessment team mission did not travel to India. Desk research was subsequently conducted to determine trade facilitation issues with India of relevance to Bangladeshi exports from the SSW region. This was not initially within the scope of this study.

NATIONAL CUSTOMS MODERNIZATION AND REFORM INITIATIVES

Bangladesh has a number of initiatives underway designed to improve the policy framework for trade facilitation, including Customs clearance. These include:

- Full implementation of the Revised Kyoto Convention (RKC) under the World Customs Organization (WCO), to which Bangladesh has acceded and which Bangladeshi authorities claim is 90% implemented.[114]
- Implementation of the WCO SAFE Framework of Standards to Secure and Facilitate Global Trade.
- Introduction of the Automated System for Customs Data (ASYCUDA) World, the Customs software supported by the UN Conference on Trade and Development (UNCTAD).[115]

In addition, the modernization of Bangladeshi Customs will require improved risk management techniques, faster turnaround at port facilities, and more sophisticated selection methods for post-clearance audit and pre-shipment verification. In Bangladesh, Customs agencies have depended for years on Pre-shipment Inspection (PSI) performed by four firms operating in different countries.[116] The PSIs are currently outsourced to international companies under contract with Bangladesh. However, this operation will eventually cease and require substantial training of Customs officials in valuation techniques.

Customs inspections balance the need to intercept contraband and collect the appropriate revenue on imports, with an obligation to facilitate trade and avoid unnecessary delays in cross-border flows. To optimize this trade-off, Customs agents use risk-management techniques. Many countries have recently adopted expedited clearance processes for importers with a track record of complying with import requirements so they can qualify for Authorized Economic Operator (AEO) status. Imports by an AEO may be exempted from inspection.[117] More generally, using databases with relevant historical data, a shipment can be selected for inspection or allowed to pass uninspected. Allowing low-risk shipments to continue uninspected through a 'green channel' speeds up average clearance times. Once selected for inspection, a shipment does not need to be opened or unpacked in order to check its contents: fast, non-intrusive X-ray or γ-ray scanning allows officers to visualize the contents.

Both the Bangladeshi and Indian Customs service fall short of these modern risk management approaches. Indian Customs visually inspects all trucks, independent of information about the threat that any given cargo may pose. On the Bangladeshi side, Customs targets a 10% sample if the cargo has been previously inspected by SGS, a private company providing PSI services. Inspections are based on risk-

[114] According to the WTO's TPR for Bangladesh (2012), a diagnostics team from the World Customs Organization has submitted an analytical report to the National Board of Revenue (NBR). The document is not public, however.

[115] Bangladesh currently uses ASYCUDA ++ at the Customs Houses of Dhaka, Chittagong, Benapole, Mongla and the Export Processing Zone. The NBR will upgrade to ASYCUDA World in 2013. Unfortunately, Indian Customs have developed their own software. Bangladesh and India otherwise share very little information between them.

[116] The PSI companies are Bureau Veritas, Intertek Testing, Société Générale de Surveillance S.A. (SGS) and the Overseas Merchandise Inspection Company (OMIC). PSI verifies unit prices and reports the quantity and quality of exports before they are sent to the importing country. PSI helps reduce the problem of over- or under-invoicing of imports, misclassification, under-collection of taxes and misappropriation of funds. Only 5% of all shipments are physically examined in Bangladesh, with the remainder of shipments undergoing documentary checks. With the introduction of this PSI system in 1999, physical inspection of consignments has plummeted from 100% to 10%, thus helping importers. While the PSI system reduces physical inspections and reduces opportunities for rent-seeking by Customs officials, it does add to the cost of imports, about 1% of the value of the imported goods.

[117] Bangladesh is considering the introduction of an Authorized Economic Operator (AEO) program and a Single Window (SW). Both systems would improve risk management and expedite trade clearance by integrating processes required by multiple border authorities.

based assessments of a given importer's track record for smuggling or under-invoicing. Customs officials otherwise check all cargo that has not been inspected by SGS. Neither side uses scanning technology. The PSI system is in the process of being phased out to allow Customs agents to assume greater responsibility. According to the November 2012 WTO Trade Policy Review for Bangladesh, the current PSI contracts expire at the end of 2012.[118]

Non-computerized paperwork is repetitive and time-consuming, with many Customs agents signing off at different stages. To the extent that some procedures are computerized, the information involved is shared only on a limited basis. Thus, hand-carried paper and duplication of processes is a permanent feature of clearance procedures. Bangladeshi Customs agents plan to implement ASYCUDA World, a web-based software, as of 2013. This measure will greatly improve clearance efficiency.

However, even if Bangladeshi Customs implements ASYCUDA World, other border services will continue to operate their clearance requirements independently, with little or no integration. Indian Customs, meanwhile, has developed its own software for Customs control. The two services share very little information. ADB is currently financing the upgrade of Benapole's facilities, including enhanced information systems, to improve the efficiency of border logistics. But ADB is not financing similar improvements at India's border checkpoint in Petrapole in West Bengal (see Box 2).

AN IDEAL BORDER CLEARANCE SCENARIO FOR THE INDIA-BANGLADESH BORDER

Without a customs union between Bangladesh and India, the ideal overland trade-facilitation situation would be based on border logistics and administrative checks that meet each government's security and revenue requirements, with minimal delay to cross-border shipments. Bangladeshi agribusiness commodities or products would proceed swiftly if administrative arrangements give high priority to trade facilitation relative to other factors. Pre-clearance of goods by relevant organizations would ensure that the exporter's declaration has correctly classified and quantified the goods, that exports have broken no law in the exporting country and that the goods meet sanitary and phytosanitary (SPS) requirements.

For goods traveling overland by road or rail, the Bangladeshi border export offices would coordinate checks of paperwork without breaking the seal on the container. It would then take minutes before the goods continued to the Indian side. Upon approval, the truck would head to the Indian border. Inspection of documents, including SPS, would be mutually recognized. A risk-management approach would ensure that scanning is done only on a limited proportion of imported goods. The shipment would continue in the same truck less than two hours later to its destination in India.[119] In addition, fast processing would make bonded warehouses a minor part of border architecture.[120] This process would be the same in both directions.

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[118] WTO, TPR: Bangladesh, p. ix, November 26, 2012.

[119] For goods not requiring SPS testing and duty payments at Bhomra and Ghojadanga, Customs and quarantine processes in both directions take 2–4 hours. This short transit time shows that clearance can be quick once unnecessary delays are stripped away. There is also evidence from other countries that such improvements are possible. USAID supported Georgian Customs in developing and implementing a risk-management approach that reduced clearance times for 85% of imports from 3–5 days to less than two hours. Source: USAID Georgia, *Risk management reduces customs clearance times,* http://georgia.usaid.gov/news/press-releases/2010/07/22/341

[120] Bangladeshi officials see warehousing as a solution to the problem of slow cross-border trade and a measure of progress in upgrading a Customs post into a land port. India appears to share this point of view. But warehouses are a symptom of trade inefficiencies. Whereas bonded warehousing is appropriate for a well-functioning border post, it is far more desirable to facilitate swift border transit.

Even more efficient systems are possible. At the joint Customs post of Malaba on the Kenya-Uganda border, officers from both countries work together to check consignments transiting in each direction.[121] As a result of cross-border cooperation, validation times have been reduced by up to 50%.

Export clearance by air and sea would mirror those carried out on land. For higher-value exports that are more likely to be chilled (flowers and vegetables) or frozen (fish and shrimp), the clearance process would respect the integrity of the cold chain. Pre-booked space would be available on ships and planes directly to profitable destinations.

An ideal information system for Bangladesh would unify the diverse actors: exporters, freight forwarders, Customs agents, truckers, port authorities, SPS agents and state security. Pre-clearance details would be routed directly to the exit post where the agent would ensure that paperless clearance details were waiting for the consignment's arrival at the border. The system would de-personalize the handling of shipments to minimize direct interaction with the exporter and thus reduce opportunities for rent-seeking behavior. It would also be compatible with the clearance procedures of the importing country so that information could travel between agents in Bangladesh and their counterparts at the destination border post. This would facilitate the tracking of trade consignments for administrative and security reasons, and provide importing agents with electronic certification to avoid having to prepare written documents. In addition, there would be no export or import quotas or bans. The fixation of Bangladeshi Customs' agents on revenue collection at Benapole comes at the cost of low logistical efficiency. Shippers at Benapole complain that non-dutiable goods are held for days, while dutiable goods are fast-tracked. The associated costs and delays make the traded goods more expensive at their destination and put pressure on less formal traders to bypass the border.[122] If Customs agents were to share data (as they do at many international border crossings), clearance would be expedited. There is also ample scope for reducing cost. In November 2012, ADB announced a major initiative to improve efficiency in Bangladeshi Customs, including Benapole (see Box 2). However, the support does not include modernization and reforms on the Indian side of the border, which would ultimately have a far more substantial impact on Bangladeshi exports from the SSW region.

CUSTOMS AND BORDER CLEARANCE DELAYS AT THE BANGLADESHI BORDER WITH INDIA

Most of the conditions for efficient trade from the SSW region of Bangladesh are not in place. We examine the shortcomings in the sections below.

Bangladeshi Border Posts: Benapole and Bhomra

Benapole is the largest land port in the Indian sub-continent. The GOB's National Board of Revenue has made a large investment there because the facility's primary function is to generate revenue on imported goods. This land port reportedly collected USD 317 million worth of revenue in 2011, an estimated 12% of the total Customs income in Bangladesh.[123] Customs explained that it intended to hire 1,000 new recruits to focus more intensively on revenue collection.

Despite the high level of investment at Benapole, the infrastructure is generally poor. Warehouses have holes in the roof and open doors expose cargo to the elements, as well as to theft. Rail is not integrated

[121] USAID facilitated this initiative. eastafrica.usaid.gov/documents/document/document/1400

[122] Illicit trade between Bangladesh and India amounts to three-fourths of regular trade, according to the World Bank: http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/SOUTHASIAEXT/0,,contentMDK:21177520~pagePK:146736~piPK:146830~theSitePK:223547,00.html

[123] The head of Customs at Benapole reported BDT 2,600 crore in 2011, which the CARANA team converted to USD 317 million.

with trucking and there is no container yard. In addition, parking is poor and the road quality inadequate. On the other side of the border (Petrapole), there are no warehouses, although some are currently being planned.

Several years ago, Bangladesh and India agreed to upgrade the Bhomra and Ghojadanga Customs posts to turn them into land ports. As with Benapole and Petrapole, this would provide them with a wider range of facilities for faster, more efficient trade. After some delays, Bangladesh began to honor this agreement in 2011. An Assistant Commissioner for Customs is now resident there and bonded warehouses are under construction. The assessment team was told that a bank at Bhomra now accepts duty payments.

Box 2: ADB Announces Two Initiatives to Facilitate Trade and Transport

In November 2012, the Asian Development Bank (ADB) announced two large-scale initiatives to support trade and transport integration in South Asia. Both are five-year programs running through 2017 and include Bangladesh among the recipient countries.

- **Customs Reform:** ADB announced a USD 48 million program to help goods transit smoothly in and out of Bangladesh, Bhutan and Nepal. The program will overhaul the time-consuming, costly and opaque Customs procedures that inhibit intraregional trade. This initiative, part of the South Asia Sub-regional Economic Cooperation (SASEC) program, was made public on November 26, 2012. India is a SASEC member, but is funding its own trade facilitation reforms and is not included in the ADB program. In addition, India's clearance procedures are considered more advanced than those of other SASEC countries. The project will help Bangladesh adopt an international Customs administration protocol, upgrade its automated Customs management systems and establish web-based electronic trade portals. These measures will provide importers and exporters with timely, accurate information.[124]
- **Road Corridor Support:** In November 2012, ADB also announced that it would provide USD 198 million, with an additional USD 60 million from partner organizations, to fund a partial upgrade of one of Bangladesh's most critical regional transport corridors, together with two land ports. This funding will be implemented under the SASEC Road Connectivity Project. The bulk of the funds are expected to go toward improvements in the Dhaka-Chittagong transport corridor. Chittagong is responsible for 90% of Bangladesh's inward and outward trade flows. However, it also includes upgrades for the land ports at Benapole and Burimari designed to boost trade volumes between Bangladesh and India, and reduce the loss of perishable goods.[125]

India has begun to follow suit. In September 2012, Indian Customs assigned its first Assistant Commissioner to Ghojadanga, though the officer had not arrived when the assessment team visited Bhomra earlier in the month. Indian Customs regulations stipulate that only someone of this rank can clear imports valued at more than INR 100,000 (USD 1,930). This regulation previously required that truckloads had to wait for clearance authorization from Kolkata before being cleared at Bhomra-Ghojadanga. Representatives of the Government of India have now agreed verbally to set up a bank branch. In the meantime, import duty payments must take place elsewhere, usually Kolkata. According to interviewees at Bhomra, there has been no progress toward the construction of bonded warehouses or additional truck parking space on the Indian side.

Although there is potential to reduce delays and costs at other points along this corridor, the core of the problem at the Petrapole-Benapole and Bhomra-Ghojadanga border lies in the procedures overseen by government institutions.

[124] "ADB to Help South Asia Clear Path for Intraregional Trade Expansion," Press release, November 29, 2012.
[125] "Upgrade of Key Bangladesh Transport Corridor to Spur Regional Trade – ADB," Press release, November 29, 2012.

Hours of Operation

The formal hours of operation on both sides of the border are 9 a.m. to 5 p.m. In practice, however, Bangladeshi Customs claimed to process shipments as late as 6:30 p.m. and Petrapole did not open for business until mid-morning because the Indian Customs officers commute daily from Kolkata. Both checkpoints close on Fridays. Bangladeshi border officials showed no interest in suggestions that the border might open for longer hours, or that they adopt a 7-day week.

Road Infrastructure at the Border

There is only one lane for traffic on the Indian side of the border at Petrapole. Trucks exporting and importing goods are forced to share the road with passenger vehicles. Bangladeshi freight forwarders note that Indian authorities have been working on a bypass road on that side of the border. But they have apparently been saying this since 2006.

In Bangladesh, the situation at Benapole is better. There is one lane for the trucks that are exporting to India and a separate lane for trucks arriving from India. However, the same freight forwarders explain that there is a bypass road that would allow for faster movement of goods into and around Benapole port that is 95% complete. The government has not given final approval for its completion. The director of the land port apparently has little authority to make such decisions.

USAID may be able to identify specific ways to support the ADB-funded trade facilitation program. It could also identify related issues in neighboring Indian ports to reinforce the impact of the work ADB is funding at Burimari and Benapole, which does not include Customs reform in India. The US Government or other donors in India should also consider supporting trade facilitation and Customs reforms that would lead to greater efficiency and speed (and improved risk management) by Customs authorities in land ports bordering Bangladesh. ADB support for Customs reform and modernization in Bangladesh could have a substantially greater impact on the speed of Bangladeshi import clearance procedures than on the country's ability to stimulate exports from the SSW region. Only through expedited Indian import clearance processes will perishable Bangladeshi exports ultimately be able to meet the demands of Indian buyers in terms of delivery time, cost, quality and freshness.

Recommendations

CURRENT SITUATION	INTERVENTION	POTENTIAL IMPLEMENTING PARTNERS
Limited border opening hours contribute to long lines of trucks at borders.	Study the costs and benefits of longer border opening hours, including a 24/7 schedule.	Customs & Ministry of Agriculture and Land Port Authorities from both countries.
ADB is undertaking a project at Benapole to improve the efficiency of port and Customs procedures.	Facilitate replication of the efficient parts of the ADB project at Bhomra-Ghojadanga.	ADB, Customs and other border services, Bangladesh Land Port Authority, Indian Customs and other border authorities.
	Participate in selected elements that ADB recommends, but in which it lacks expertise.	
	Support improvements of Indian Customs and border clearance procedures that would match improvements funded by ADB in Bangladesh, especially those that would impact on Bangladeshi exports to India.	

BORDER GOVERNANCE ISSUES

Road corridors in Bangladesh clearly suffer from poor logistics. To improve the situation, it is important to understand the underlying causes. One school of thought focuses on poor equipment and technology; another sees governance as a more fundamental, deep-rooted issue. These are not mutually exclusive.

The long lines of trucks at the border persist because Customs cannot process them until they have finished checking the trucks that have reached the head of the line. The agents need to open trucks to make careful inspections and wait for test results before allowing them to proceed. In essence, their hands are tied because they do not have the parking space or organizational ability to process those further down the line. Delays are a function of logistics. If the two governments would increase parking space, conclude an agreement about reciprocal recognition of standards, implement a more efficient processing protocol, open the border 24/7 and allocate more agents to the border post, the bottlenecks would disappear.

The other model emphasizes rent-seeking behavior and governance. It suggests that the ethos of border officials is one of control. This allows great scope for delays that can be bypassed through an informal payment. However, it is not easy to distinguish controlled delays from diligent revenue collection and justifiable searches for contraband. According to traders, the principal actors are Customs agents, who have great latitude to slow down border passage. They focus on imports, particularly dutiable imports, and pay scant attention to export cargo. The apparent inability of Indian Customs to house its officers at Petrapole and the lack of interest on both sides in extending border-post hours would be further evidence for a rent-seeking mentality, as is the continuity of direct interactions with the exporter.

According to this school of thought, the border officials have the ability to delay shipments. The argument is that their strategy is to maintain long lines of trucks through their slow processing of paperwork and the extent to which they open trucks to inspect the cargo. All relevant sources interviewed agreed that the traffic congestion at the border has persisted. The long lines send out the implicit message to traders that Customs can hold up millions of dollars of goods. This creates a compliant set of private-sector actors when a given truck reaches the front of the line.

Customs officers are often suspected of having two agendas, one official and the other personal. They must fulfill their official targets for revenue collection from import duties. But they may also seek to supplement their official salaries. In comparable situations in other countries, Customs officials pay a significant bribe to be assigned at a specific posting. Each of the border control organizations has some control over the rate at which a given shipment is processed. However, truckers and traders focus principally on the Customs service when explaining the reasons for border delays.[126]

There is evidence that rent-seeking behavior is an important factor in the delays and costs associated with border crossings between Bangladesh and India, though not the only one. The current assessment did not determine the relative importance of the different factors causing inefficiency, which probably vary. A more focused assessment of this problem, possibly as part of a detailed study of bottlenecks on the two land corridors to Kolkata, would be the first step to finding a solution. It should be integrated with ADB work currently underway at Benapole. Since the ADB program does not encompass India, the US Government or other donors may wish to consider supporting border governance issues at Petrapole.

[126] The informal private sector may have reasons to conspire with rent-seeking officials because their operations may not meet national standards due to expired or fraudulent documentation, non-compliant goods or technically deficient trucks. Khulna truck-owners noted that many Bangladeshi truckers buy low-quality trucks from India that run inefficiently. According to them, the GOB does not monitor for safety, resulting in accidents.

Recommendations

CURRENT SITUATION	INTERVENTION	POTENTIAL IMPLEMENTING PARTNERS
Traffic congestion at land borders without proven evidence that would allow for the proposal of solutions.	Document the length of processes at the border to establish different causal factors that generate waste and inefficiency. This could lead to regular periodic (quarterly?) publishing of statistics on delays and rent-seeking activities along the corridor, particularly at the Benapole-Petrapole border.	ADB, Customs and other border services in Bangladesh and India, Bangladesh Land Port Authority and its Indian counterpart, private sector, truckers' associations and drivers' unions.

STANDARDS

Bangladesh's ability to expand exports of goods originating in the SSW would benefit from the development and enforcement of clear standards as they affect priority exports from the region.

SPS CERTIFICATION AT THE BANGLADESHI-INDIAN BORDER

The delays experienced by Bangladeshi fresh-produce exports at the border with India are minimal. Fresh produce exported from Bangladesh through Benapole receives priority in the processing queue and proceeds without delays. This fast-track treatment leaves no time for laboratory analysis and means that SPS agents can perform no more than a visual inspection of the produce before granting a certificate. SPS labs in Bangladesh that test fresh produce are closed on Fridays and Saturdays, so delays of up to 48 hours occur. This would significantly damage perishables.

Regarding the delays associated with exports to India, Bangladeshi interviewees emphasized the long waits for phytosanitary controls as part of Indian import procedures.[127] Indian authorities apply risk analysis methods to Bangladeshi agricultural products, which often involve testing samples of the produce. Although Indian officials require Bangladeshi SPS certificates, they do not accept testing certification from Bangladesh and insist on administering their own SPS tests in Kolkata or Banares. They also require import permits from India's Agriculture Ministry for virtually all agricultural imports. Bangladeshi exporters complain that there is a lack of transparency in the bureaucratic process.[128] During delays at the border for SPS testing, uncontainerized agricultural produce is routinely unloaded, stored in bonded warehouses and reloaded onto another truck upon successful completion of testing. The Indian government has proposed to build warehouses to accommodate interim storage, rather than trying to speed up border-clearance procedures. It is clear that Bangladesh and India lack standards that are mutually recognized and efficiently applied. Common standards would reduce delays for Bangladeshi exporters and probably play a similar role in the opposite direction.

[127] Although quarantine inspectors in both Bangladesh and India carry out SPS checks of both imports and exports, they are more thorough with inspections of imports than exports.
[128] Bangladeshi exporters cite one of the rules in India's *Prevention of Food Adulteration Rules* that contains 30 provisions, with many sub-provisions and cross-references to other rules.

Box 3: Who's Who in Bangladeshi Standards

Bangladesh's Ministry of Industries is responsible for the institutional framework on national standards, quality and conformity assessment. The main institutions involved are the Bangladesh Standards and Testing Institution (BSTI) and the Bangladesh Accreditation Board (BAB). A new regulatory body to enforce mandatory technical regulations is currently being planned.

BSTI is in charge of formulating national standards for all products, except pharmaceuticals. It enforces compliance with standards and certifies the quality of products for export, import or domestic consumption. The objective at BSTI is to harmonize national standards with international standards, or to adopt international standards altogether.

The Ministries of Agriculture, Health, and Fisheries and Livestock are tasked with SPS issues. For Bangladeshi exports of plants and plant products, the Ministry of Agriculture oversees:

- Inspection prior to export
- Testing and treatment (if required)
- Inspection of fields in the growing season prior to export
- Certification that the origin of a consignment is a pest-free production area of low pest prevalence.

The Ministry of Health and Family Welfare works with the Ministry of Fisheries and Livestock to prevent or control human and animal diseases that may be transmitted through international trade. They also monitor environmental sanitation and carry out ship inspections.

The Ministry of Fisheries and Livestock issues international veterinary certificates for exports of animal products. The Fish Inspection and Quality Control (FIQC) section of the Department of Fisheries is responsible for inspecting exportable fish and fish products. Shipments that are harvested, collected, transported, preserved, processed and packed in accordance with FIQC regulations and the importing country's standards are issued a Health Certificate by the Department of Fisheries. Currently, pre-export tests of fish, shrimp, and fish products are conducted in four laboratories in Dhaka, Chittagong, and—importantly for the SSW region—Khulna.

This assessment considers export options for agricultural value chains that generate income for the SSW region of Bangladesh. None of the value chains considered in this area generated processed products for which exporters cited standards as a barrier to exports. In one case, an exporter of Bangladeshi processed fruit juices had problems importing them into India. But in that case, the processing took place in Dhaka. Thus, this standards section does not consider issues pertaining to processed goods.

PRIVATE-SECTOR VOLUNTARY STANDARDS

Private-sector voluntary standards are important to large buyers of fresh produce in developed economies. Prospective exporters targeting these markets are increasingly focused on meeting strict supermarket standards such as Global GAP, EurepGAP and ISO 9000 for their entire value chains, rather than obtaining domestic SPS certification for a particular shipment. Bangladesh's exporters of vegetables and flowers mainly target Middle Eastern and Asian markets,[129] where standards are not as high. However, if it makes financial sense for them to target the higher-value EU and US markets, they

[129] The assessment team did not hear complaints about delays due to SPS lab testing at Mongla Port or Dhaka's Shahjalal Airport, from which agricultural commodities are transported to markets in the Middle East and Asia.

will have to change their business strategy. One model is Bangladesh's PRAN Foods[130], an established, large-scale producer and exporter of food and beverages. The company exports to 82 countries (including India) and is compliant with ISO 9001 and Hazard Analysis and Critical Control Point (HACCP). PRAN's export focus is on processed foods, so its specific concerns about product standards are not those of Bangladeshi exporters of fresh produce. Still, its systematic approach to international business is one from which they would benefit.[131]

Recommendations

CURRENT SITUATION	INTERVENTION	POTENTIAL IMPLEMENTING PARTNERS
Absence of mutual recognition of SPS certification with India applied efficiently to facilitate swift border crossing.	Facilitate the negotiation of an SPS agreement to accelerate exports of agricultural produce, particularly from Bangladesh to India.	Ministries of Agriculture of both countries and the Commercial Attaché of the Indian High Commission.
Lack of targeting of large shipments of fresh agricultural produce to high-value world markets from the SSW.	Identify companies in the SSW that might competitively supply developed-economy supermarkets with fresh produce. Design a program to facilitate their entry into these markets, possibly in collaboration with PRAN.	Hortex Foundation, PRAN, Ministry of Agriculture, PRICE and the Export Promotion Bureau.

Box 4: Bangladesh and the Special Case of EU Fish and Shrimp Standards

Bangladesh has faced ongoing challenges in the past 15 years regarding standards for its fish exports, particularly in the EU market. The EU is the largest importer of Bangladeshi shrimp, accounting for half of the country's shrimp exports. In May 2009, Bangladesh received a high number of alerts under the EU's Rapid Alert System for Food and Feed (RASFF)—a system that provides EU authorities with an effective tool to exchange information about measures taken in response to serious food and animal feed risks. This led Bangladesh to impose a six-month voluntary ban on exports of freshwater prawn to EU markets. The ban was lifted in December 2009 after the GOB implemented corrective measures. The number of RASFF alerts has dropped significantly, from 50 in 2009 to 6 in 2011. There were none in the first quarter of 2012, an important development.

[130] http://www.pranfoods.net/

[131] PRAN imports significant quantities of its raw material from India and has experienced import delays at the Petrapole-Benapole border crossing. But this is of limited relevance compared to export constraints of fresh produce in the opposite direction.

V. RECOMMENDATIONS

In this chapter, the assessment team presents a set of recommendations for USAID and the GOB. These recommendations were developed on the basis of the research, analysis and findings of this report. They are aimed at increasing regional and global exports from the SSW region of Bangladesh. They also put forth illustrative and cost-effective interventions that would contribute to the income generation and market access objectives of USAID/Bangladesh's FTF program.

The assessment team sifted through recommendations made in previous chapters to identify the most important ones. The choice of the recommendations retained for this chapter was based on two criteria:

- Those that would prove most effective in removing the binding constraints to value chain efficiency.
- Those that would have the largest impact on expanding exports and generating income in the SSW FTF region.

Our recommendations are centered on three different clusters of program activities:

1. Export value-chain development initiatives for global markets,
2. Cross-cutting initiatives in support of export value chains,
3. Bangladesh-India cross-border trade development initiatives, and

A program may take elements of each of these clusters, or may select an approach that focuses on value chain development (Cluster 1), cross-cutting initiatives (Cluster 2), or cross-border trade (Cluster 3). Separate programs could be developed in each of these areas. The team does not favor one cluster over another; elements of each cluster would contribute to the food security of the SSW region by stimulating exports from targeted sectors, eliminating broad-based constraints to exports from the region in a wider number of sectors than has been discussed in this assessment, or targeting the removal of obstacles at the Bangladesh-India border to Bangladeshi exports from the SSW region. These clusters of program recommendations are summarized in the sections below.

EXPORT VC DEVELOPMENT RECOMMENDATIONS

The recommendations and initiatives proposed in this cluster seek to expand food and non-food agricultural exports from the targeted VCs in the SSW region to global markets.[132] Based on the assessment team's experience, we have observed that export and trade development strategies that focus on specific value chains—within specific geographic regions and corridors—have a more likely near- to medium-term impact on increased exports from the targeted value chains than do cross-cutting interventions. (Cross-cutting assistance, such as in the areas of trade facilitation and logistics, may, however, create more sustainable and fundamental changes to an economy or region that will in turn enable sectors beyond those that would have been targeted in a value chain program to improve exports over a medium to long-term timeframe.)

For near- to medium term results with a high probability of effectiveness, USAID might thus productively consider an export-focused value chain development program for the SSW region focused

[132] Cluster 3 focuses on more specific Bangladesh-India cross-border trade expansion.

on the top 3 to 4 scoring value chains in this report. Aprogram of assistance might be prioritized according to the following ranking of the VC's potential export impact:

1. Shrimp/prawns (Strong Potential Export VC)
2. Jute (Strong Potential Export VC)
3. Vegetables (Medium Potential Export VC)
4. Floriculture (Nascent Export VC)
5. Coir (Nascent Export VC)

Our observations and conclusions about the rankings of these VCs are:

- Two VCs (Shrimp/Prawns and Jute) rank highest in terms of their export performance potential. They are both well-established agricultural export VCs in the SSW region. These two VCs already have the capacity to supply foreign markets and further expand in the SSW.
- Fresh Vegetables are ranked as having medium potential in terms of export performance. For decades, Bangladesh has exported small quantities of vegetables by air to diaspora communities worldwide. It is also supplying domestic markets on a reasonable scale.
- The two other VCs (Cut Flowers and Coir) rank lower since they are non-traditional exports and have not yet penetrated export markets on any substantial scale. They are included as emerging nascent export VCs showing good medium-term potential if they obtain development support.

The following tables present the most important recommendations retained on the basis of the criteria listed earlier in this chapter. The items shaded in light blue indicate studies or research. The others are activities proposed for implementation.

CURRENT SITUATION	INTERVENTION	POTENTIAL IMPLEMENTING PARTNERS
SHRIMP/PRAWNS VC RECOMMENDATIONS		
Most shrimp and fish processors do not know the source of their raw material and are often unaware of chemicals added to the product. This lack of supply chain traceability limits access to international markets for Bangladeshi producers.	Introduce a pilot supply chain traceability system for shrimp/prawns that documents where each kilo of product came from, how it was processed and which chemicals or pesticides were used, as well as when the product was harvested and processed.[133]	Ministry of Fisheries and Livestock, Bangladesh Frozen Foods Exporters Association (BFFEA) and the Bangladesh Shrimp & Fish Foundation.
Weak implementation and enforcement of Hazard Analysis and Critical Control Points (HACCP) and Sanitary and Phytosanitary Standards (SPS).	Build industry awareness to promote adherence to health and safety standards and create a competitive advantage for Bangladeshi aquaculture.	Ministry of Fisheries and Livestock, BFFEA and the Bangladesh Shrimp & Fish Foundation.

[133] This program can subsequently be scaled up to an industry-wide standards program if there is support from donors, government agencies and industry groups.

The industry confronts a potential setback if GSP is withdrawn due to labor rights violations in, among other industries, shrimp farming and processing. Although Bangladeshi shrimp enters the US duty free (and is not covered by GSP), withdrawal of GSP for Bangladesh could cause consumers to curb their purchases of Bangladeshi shrimp and prawns as a result of concerns about Bangladeshi labor practices in the sector, especially with respect to women and children.	Work with the Worker Rights Consortium to establish a model program of labor rights that would be adopted by shrimp processing plants which would include a living wage, the right to organize, and offer health and safety benefits, while guaranteeing that there is no child labor.	BFFEA, Ministry of Fisheries and Livestock, Bangladesh Shrimp & Fish Foundation, Worker Rights Consortium
JUTE VC RECOMMENDATIONS		
Farmers typically lack knowledge about the range of jute grades and market prices.	Extension services and export-led firms improve producer knowledge of seed quality, retting technology, and jute grading and pricing.	Department of Agricultural Extension, Bangladesh Jute Research Institute and private firms.
Low level of domestic production of jute-diversified products.	Programs to support domestic development and production of value-added products and branding of Bangladeshi products.	Jute Diversification Promotion Center, Bangladesh Jute Research Institute, Export Promotion Bureau and the Bangladesh Jute Goods Association.
Underperforming state-owned jute mills.	Study on the impact of government participation in the milling industry in terms of efficiency and quality.	Bangladesh Jute Mills Corporation and the Center for Policy Dialogue.
FRESH VEGETABLES VC RECOMMENDATIONS		
Inadequate cargo terminals, storage infrastructure and cold-chain facilities at key points along the value chain.	Public Private Partnership to develop air cargo facilities and integrated cold chains in Jessore and Dhaka.	Private investors, Ministry of Civil Aviation and Tourism and the Ministry of Commerce.
Absence of certified testing laboratories and lack of conformity to international standards such as GlobalGap.	Promote private investment in a certified laboratory, as well as the high quality standards of GlobalGap certification and compliance.	Bangladesh Standards and Testing Institution (BSTI), Ministry of Industries and the Hortex Foundation.
Inability of international buyers to access large volumes of vegetables that meet strict quality and delivery requirements.	Promote firm-smallholder value chain linkages to transfer technology and know-how, and develop longer-term relationships through contract farming.	Hortex Foundation and the Federation of Bangladesh Chambers of Commerce and Industry.

CUT FLOWERS VC RECOMMENDATIONS		
Low production yields.	Introduce new varieties adapted to lower water use and saline conditions. Improved extension services to farmers.	Bangladesh Agricultural Research Institute (BARI), agricultural colleges/universities, GOB extension agents and commercial partners.
Limited vase life of flowers due to lack of transportation and cold-storage infrastructure.	Carry out a study to identify at which point vase life is most vulnerable and develop commercially sustainable cold-chain solutions.	Flower grower associations, trucking companies, flower wholesalers and packing stations.
Unreliable air transportation to export markets.	Develop MOUs and contracts with air cargo companies to confirm export air cargo space availability prior to harvesting.	Flower grower associations, commercial airlines and logistics companies.
COIR VC RECOMMENDATIONS		
Absence of institutions to promote the market development of the coconut sector.	Create a private-sector driven industry organization for the coconut sector.	Federation of Bangladesh Chambers of Commerce and Industry; draw on the experience of Creation Private Ltd. in jute.
Inability of coir-producing firms to find buyers for coir dust by-products.	Establish and build market linkages, nationally and internationally.	Export Promotion Bureau and Chamber of Commerce.
Uncertainty about the optimal mix of coconut products.	Conduct a study to establish the potential for value-added and job creation associated with coconut value-added products, including coir.	A Southeast Asian coconut research institute and the Bangladesh Institute of Development Studies (Agriculture & Rural Development Division).

CROSS-CUTTING RECOMMENDATIONS IN SUPPORT OF EXPORT EXPANSION FROM THE SSW

This cluster of recommendations focuses on the cross-cutting initiatives that are most needed in support of the targeted export value chains (or other potential VCs) from the SSW region. USAID has had considerable success worldwide in implementing programs that provide cross-cutting (or horiztonal) services in support of vertical value-chain development initiatives.

The logic of this integrated value-chain development approach is based on the premise that specific end-market needs drive new investment, upgrades and improved processes within each of the targeted VCs. In order to enable VC producers and intermediaries to align their supply responses to market requirements, programs also require broader horizontal support activities. The majority of these support activities cut across all targeted VCs in order to achieve economies of scale in their delivery. Some differentiated approaches that are specific to each VC may also be necessary.

The types of cross-cutting initiatives needed by the export value chains from SSW Bangladesh include: trade policy reforms; improvements in transportation infrastructure, such as upgrades to cold-storage facilities and a new air cargo terminal at Dhaka's Shahjalal Airport; enhancements to Mongla Port's efficiency to increase the global reach of the shrimp, jute and coir value chains; and a pilot mobile technology activity that would improve the quality of information available to producers and those adding value in the market chain. In addition to these initiatives, some of the VC-specific pilot initiatives summarized in Cluster 1 above (cold-chain development, quality standards and traceability), if successful, could be scaled up and broadened to become national cross-cutting programs.

CURRENT SITUATION	INTERVENTION	POTENTIAL IMPLEMENTING PARTNERS
TRADE POLICY RECOMMENDATIONS		
Bangladesh faces high duties on exports of agricultural products to major export markets and does not always have a trade preference (margin of preference) compared to other competing suppliers.	Conduct a detailed product-by-product market access assessment for leading goods from the SSW region. Identify specific products that enjoy a tariff preference in a given market as a priority for marketing by Bangladeshi exporters.	Ministry of Commerce, WTO and ITC Geneva.
AIR CARGO INFRASTRUCTURE RECOMMENDATIONS		
Lack of an efficient air-cargo facility at Dhaka's Shahjalal Airport to take advantage of the expansion of exports by air.	Facilitate an alliance to undertake studies and negotiations with the goal of building and operating an air-cargo facility at (or near) Dhaka's Shahjalal Airport and charter cargo planes on a regular basis.	Export Promotion Bureau, Civil Aviation Authority, Biman and the Federation of Bangladesh Chambers of Commerce and Industry.
Uncertainty about the profitability of an air-feeder service from Jessore to Dhaka.	Commission a study to determine the conditions for profitability.	Dhaka trading houses and a logistics company.
MONGLA PORT RECOMMENDATIONS		
Uncertainty about the timing of the various planned port improvements.	Examine the ADB feasibility study (in progress as of September 2012) with stakeholders to identify unfunded elements with potential to increase exports from the SSW.	ADB, Mongla Port Authority (MPA), Customs, freight forwarders and exporters of shrimp, fish and jute.
MOBILE TELEPHONY RECOMMENDATIONS		
Bangladeshi farmers of export commodities often incur losses because of insufficient price and market information that would allow them to increase sales and profitability.	Launch a pilot project in a specific district of the SSW that addresses key information gaps through mobile technology.	ACT project.

FOOD SAFETY STANDARDS RECOMMENDATIONS		
Lack of targeting of large shipments of fresh agricultural produce to high-value world markets from the SSW.	Identify companies in the SSW that might competitively supply developed-economy supermarkets with fresh produce. Design a program to facilitate their entry into these markets.	Hortex Foundation, PRAN, Ministry of Agriculture, and the Export Promotion Bureau.

BANGLADESH-INDIA CROSS-BORDER TRADE DEVELOPMENT INITIATIVES

Given the vast potential to increase the relatively modest level of bilateral trade between Bangladesh and India, this report identified a number of Bangladesh-India specific trade and transportation issues and constraints that should be tackled, preferably through a bilateral cooperation program between the two countries. Several examples include: transportation corridor governance issues; transportation corridor infrastructure challenges; transportation policy issues; Customs and border issues; and technical standards and negotiations.

Any investments that USAID/Bangladesh might make in speeding up land-border crossings with India and reducing transportation costs will need to consider what happens on the other side of the border. While there is an urgent need to address the binding constraints on the Bangladeshi side, there is also a need to confirm whether weak links are also being addressed on the Indian side. There is undoubtedly work to be done on the two Dhaka-Kolkata corridors. But without a USAID regional project, it might make sense to work jointly with ADB. The bank is already working at Benapole (and probably at Petrapole) and operates with a sub-regional purview. ADB may also be able to find out if longer border opening hours proposed in Bangladesh would meet with resistance from Indian counterparts.

Given this caveat, there are several opportunities for USAID to use its experience in "soft infrastructure development" to make border-crossing a faster, cheaper and more transparent process. If the *Motor Vehicle Agreement* comes into effect as projected, the impact on cross-border transit times should be evident in any monitoring of corridor times for shipments.

Another possible high-impact border initiative would be for USAID to finance the introduction of scanners at Bangladeshi Customs offices and border stations, preferably where other institutions are funding the introduction of scanning equipment on the Indian side. Another option would be for USAID to "adopt" Bhomra and reproduce the successes from the ADB project at Benapole, assuming that the technology and techniques would be replicated across the border at Ghojadanga.

USAID has significant experience in developing information systems to monitor inefficiencies along trade corridors. It also knows how to use the output from these systems as the basis for civil-society advocacy to publicize and reduce bottlenecks. Such a system might focus on border crossings or on a complete corridor. Any integrated work between US Embassies in Bangladesh and India on a specific corridor should be designed as the first steps in such a system.

Given their critical impact on market access in India, issues such as sanitary and phytosanitary (SPS) inspections and product quality must also be addressed. These issues present a market access barrier that prevents small farmers and processors from taking advantage of market opportunities. USAID could support efforts aimed at mutual recognition of standards for agricultural goods.

The following tables summarize the recommended program initiatives and studies needed to tackle Bangladesh-India specific trade and transportation issues at border crossings.

CURRENT SITUATION	INTERVENTION	POTENTIAL IMPLEMENTING PARTNERS
BANGLADESH INDIA CROSS-BORDER RECOMMENDATIONS		
Traffic congestion at land borders without evidence that would allow for the proposal of viable solutions.	Document the length of processes at the borders to establish the causal factors that generate waste and inefficiencies. This could lead to a periodic publishing of statistics on delays and examples of rent-seeking behavior along the corridor, particularly at the Benapole-Petrapole border.	ADB, Customs and other border services, Bangladesh Land Port Authority, private sector, truckers' associations and drivers' unions.
Overloaded trucks damage the roads and bridges on the two corridors between Kolkata and Dhaka at a cost of hundreds of millions of dollars.	Develop practical protocols to conduct a risk-managed sample of trucks weighed at various points along the corridor and enforce fines and offloading of surplus cargo.	Ministry of Communication, Roads & Highways Department, truckers' associations and truck-drivers' unions.
Road-side corruption on the Bangladeshi and Indian sides of the border leads to excess road transportation costs and time delays. These serve as effective taxes on domestic commerce and international trade with India.	Work with the Ministry of Communication, truckers' associations and export traders to document the frequency and financial impact of roadside hassles and corruption. This analysis could eventually be broadened to include the entire Dhaka-Kolkata road corridor.	Ministry of Communication, Roads & Highways Department, truckers' associations and truck-drivers' unions.
ADB is undertaking a project at Benapole-Petrapole to improve the efficiency of port and customs procedures.	Facilitate a replication of the efficient parts of the ADB project at Bhomra-Ghojadanga.	ADB, Customs and other border services, and the Bangladesh Land Port Authority.
	Participate in selected elements of the ADB project at Benapole-Petrapole to improve the efficiency of port and Customs procedures that ADB recommends, but in which it lacks expertise.	
Limited border opening hours contribute to traffic congestion, especially trucks loaded with export goods.	Study the costs and benefits of extending the opening hours at border posts, including a 24/7 schedule.	Customs and Ministry of Agriculture, Land Port Authorities from both countries
BORDER-RELATED FOOD STANDARDS RECOMMENDATIONS		
Absence of mutual recognition of SPS certification with India applied efficiently to facilitate swift border crossing.	Facilitate the negotiation of an SPS agreement to accelerate exports of agricultural produce, particularly from Bangladesh to India.	Ministries of Agriculture of both countries and the Commercial Attaché of the Indian High Commission.

ANNEX 1: VC ANNEX

The assessment team evaluated the five value chains according to fourteen different criteria, six on the demand side and seven on the supply side.

DEMAND-SIDE VC SELECTION CRITERIA:

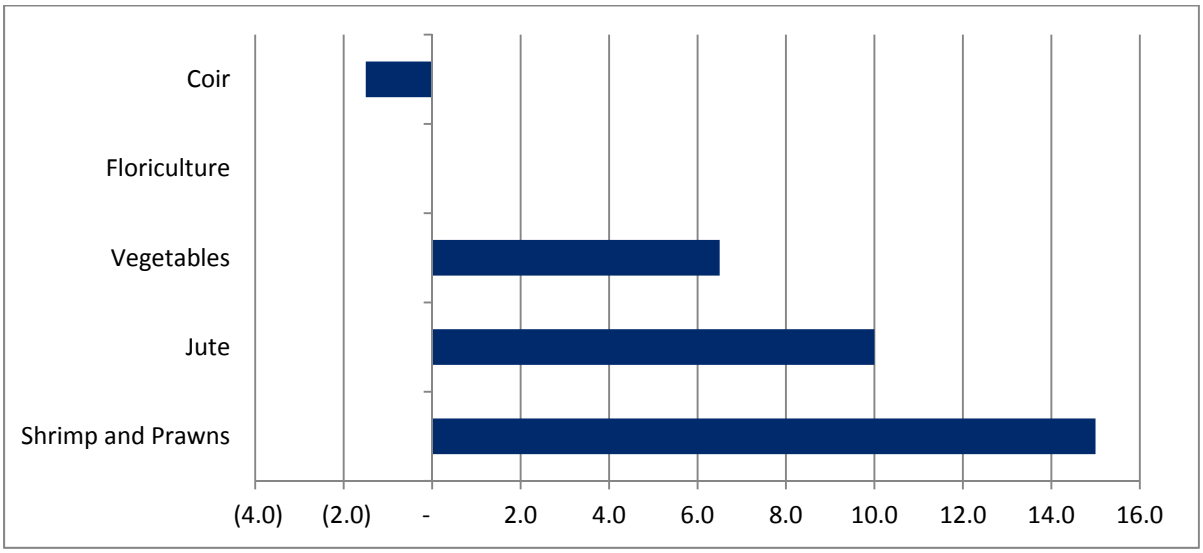
1. World market size for this VC product,
2. World import growth rates for this VC product,
3. Bangladesh's revealed comparative advantage (absolute) for this VC product,
4. Bangladesh's revealed comparative advantage (trend) for this VC product,
5. Bangladesh's market share (absolute percentage) for this VC product,
6. Bangladesh's market share (trend) for this VC product, and
7. Tariff rates and tariff preference margin.

SUPPLY-SIDE VC SELECTION CRITERIA:

8. Bangladesh's export performance in this product,
9. Bangladesh's export value in this category,
10. Bangladesh's production growth trend,
11. Bangladesh's production price for this product,
12. Employment potential for this VC,
13. Female employment potential for this VC, and
14. Ease of supplying foreign markets in FTF region with this VC.

The ranking was based on a scale of negative one to two, with negative one representing detrimental performance, zero denoting neutral performance, one meaning positive performance and a score of two for exceptional performance. The total score for each of the value chains is shown below:

Figure 27 – Total Value Chain Scores.



The following graphs map the performance of each value chain across all fourteen criteria:

Figure 28 – Comparison of Value Chain Scores Across Criteria

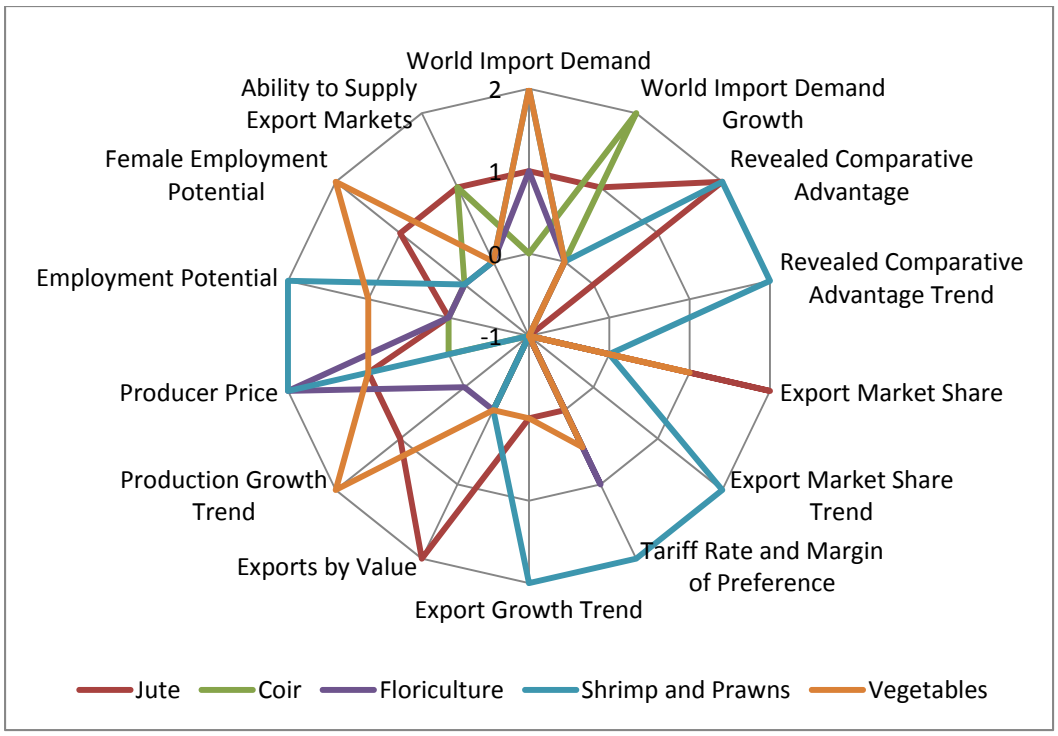


Figure 29 – Shrimp and Prawns

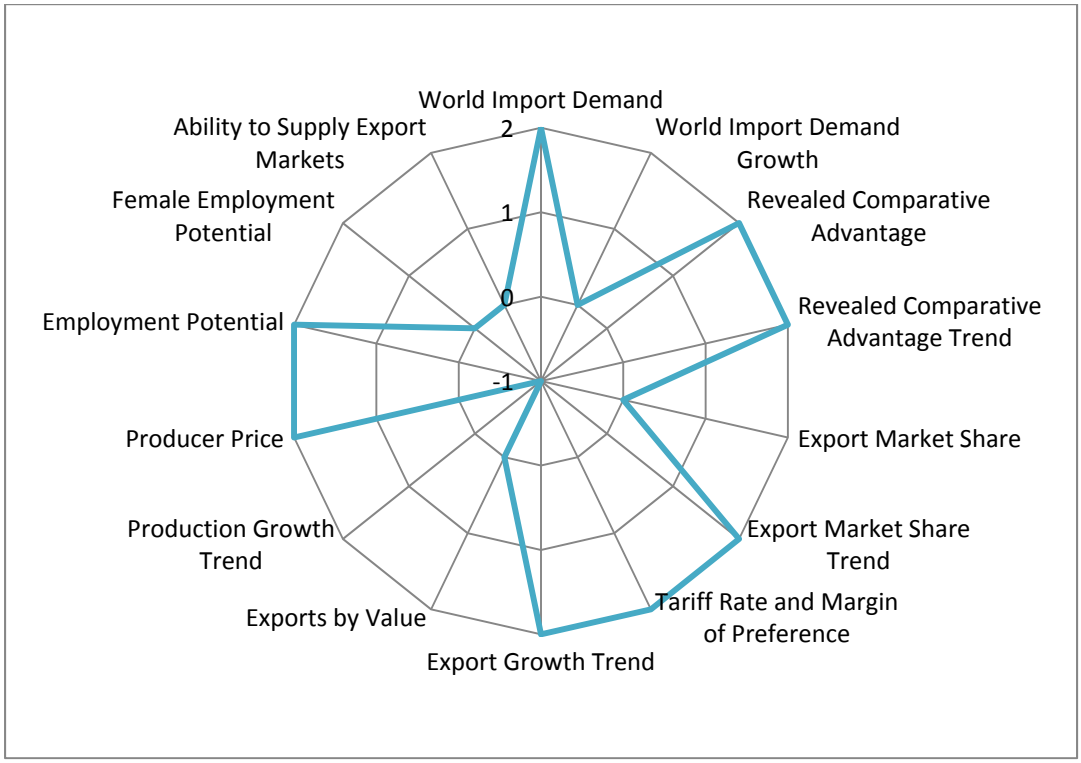


Figure 30 - Jute

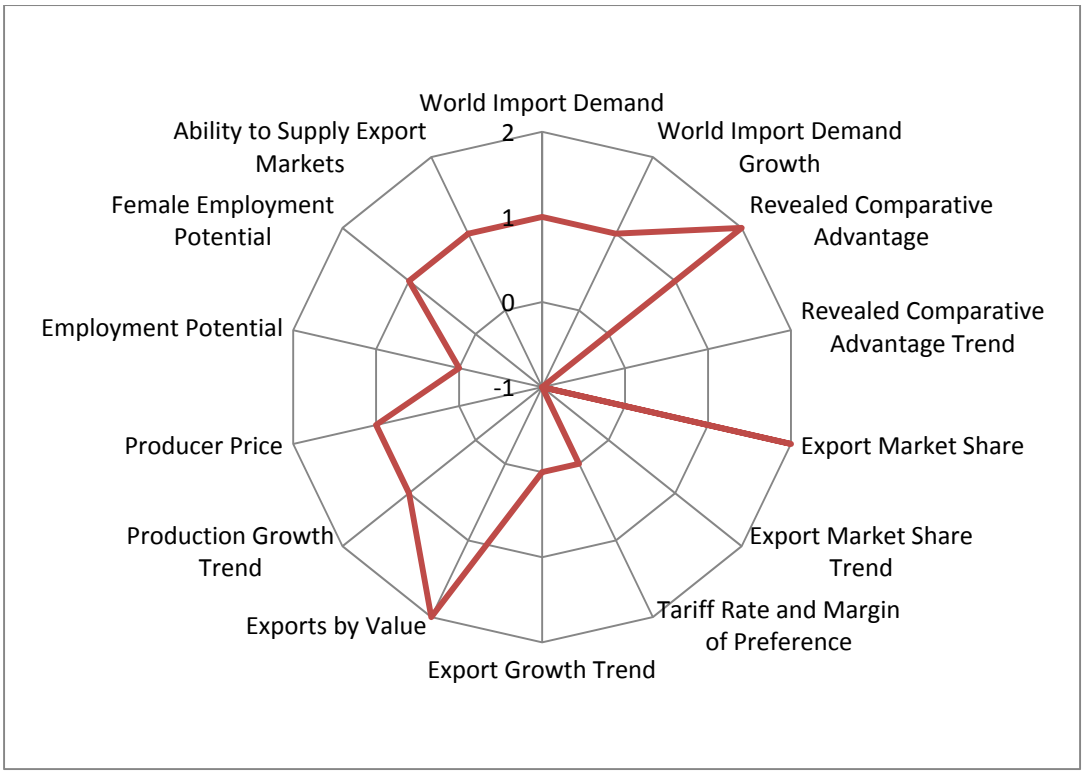


Figure 31 - Vegetables

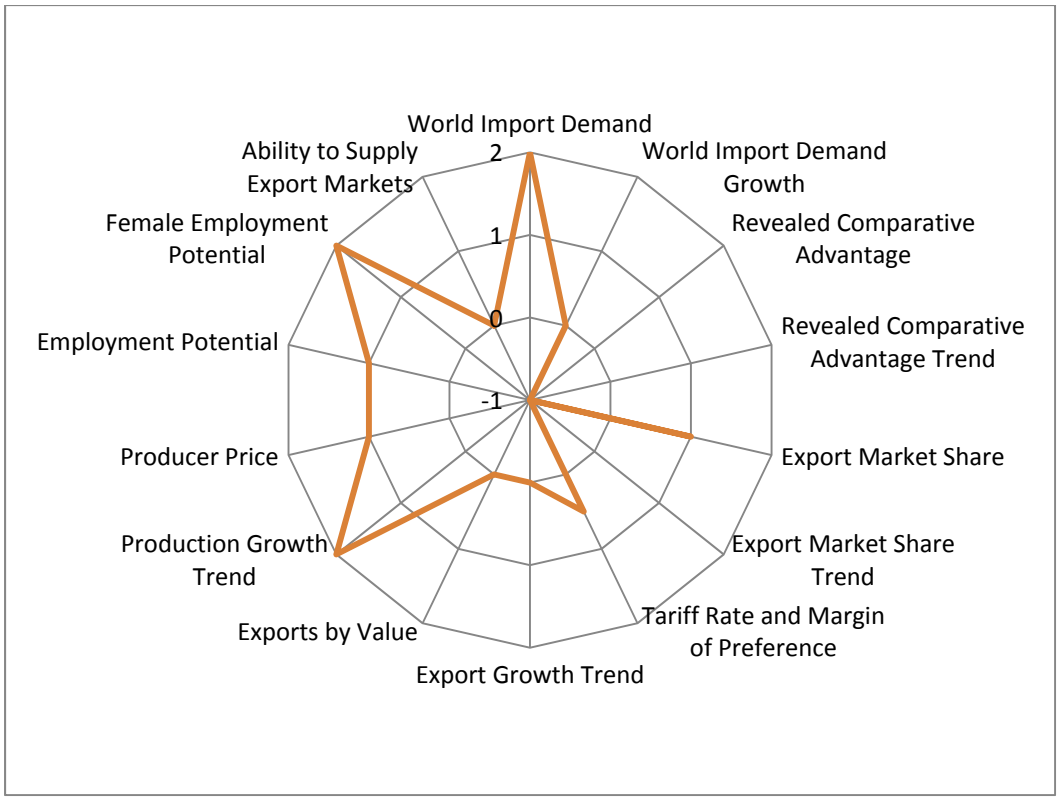


Figure 32 - Coir

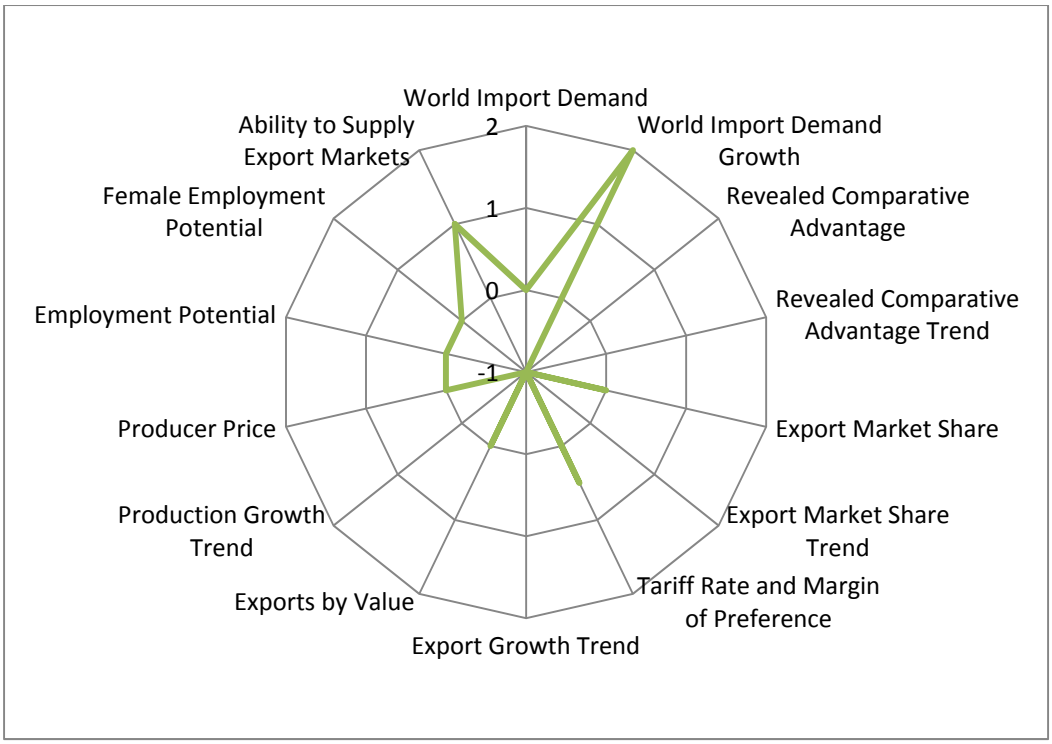
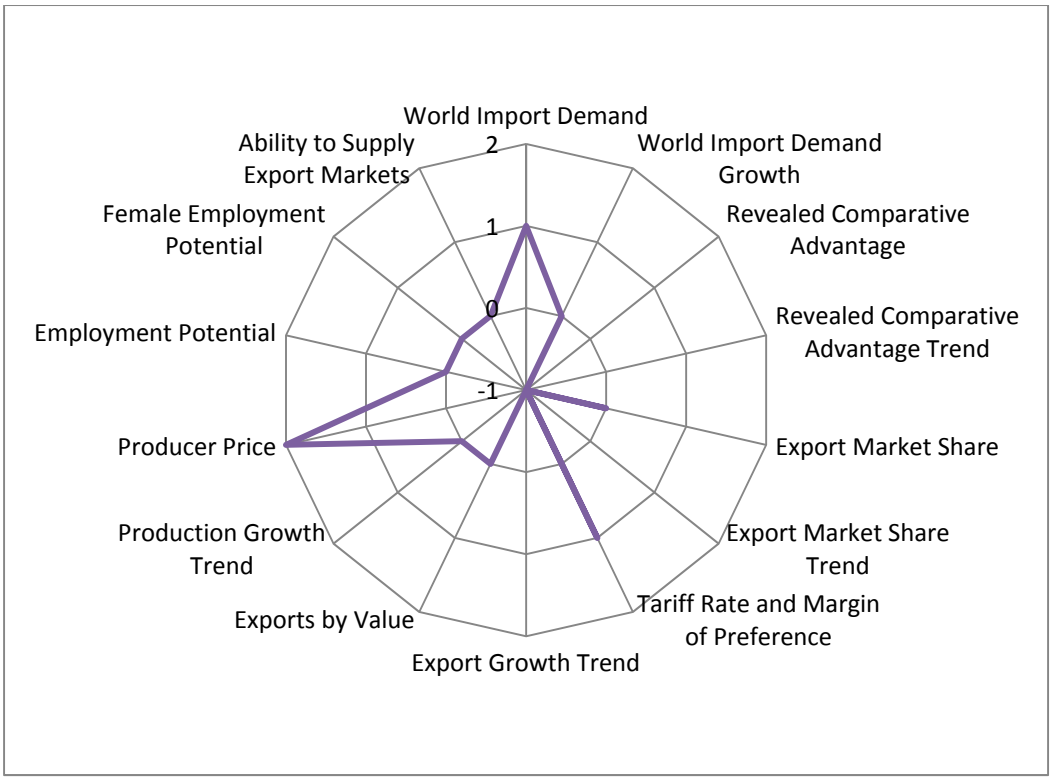


Figure 33 - Floriculture



The rest of the annex provides some explanation of the data used in evaluating the value chains and the methodology for the scoring.

DATA NOTES

Since 2008, Bangladesh has not reported its national trade statistics to UN Comtrade. Thus, the only available data is reconstructed "mirror" export statistics using import data from Bangladesh's trading partners. This data is often inaccurate due to issues of underreporting, and the differences in import (FOB) and export (CIF) reporting standards. In the case of Bangladesh, it appears to have underestimated total exports between 2008 and 2011.

The data for the scoring was compiled from a variety of sources, but the same HS codes (listed below) were used to define the value chains wherever possible.

VALUE CHAIN	HS CODE	DEFINITION
Jute	5303	Raw or retted jute, not spun
	5307	Yarn of jute or other textile bast fibers
	5310	Woven fabrics of jute
	630510	Jute sacks or bags for packing of goods
	560710	Twine cordage or rope of jute, or other textile bast fibers
	570500	Carpets and other textile floor coverings not elsewhere specified
	640590	Footwear not elsewhere specified
Coir	5305	Coconut fibers raw, processed, not spun
	570220	Floor coverings of coir
	530810	Coir yarn
Flowers	0603	Cut flowers and buds for bouquets, fresh or dried
	060499	Foliage, branches for bouquets
Shrimp and Prawns	030613	Shrimp and prawns, frozen
	030623	Shrimp and prawns, fresh
Vegetables	07	Edible vegetables and certain roots and tubers

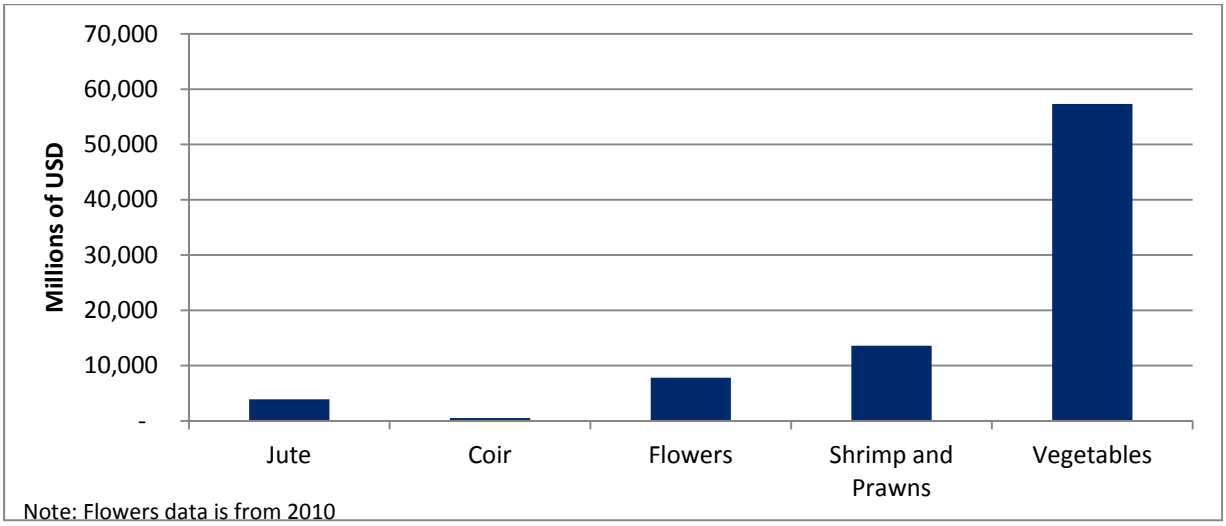
Data sources include:

- The Bangladesh Bureau of Statistics (census and economic survey data),
- The International Trade Centre's TradeMap tool,
- The International Trade Centre's Market Access Map tool,
- UN Comtrade database,
- FAO Stat data,
- NACA Shrimp Price Study Phase II,
- Profitability of Flower Production and Marketing System of Bangladesh,
- Investment Opportunity Profile for Cut Flower Pants in NWFP, and
- Information obtained in interviews and focus group discussions.

WORLD MARKET SIZE

2011 UN Comtrade data on world imports was used as a proxy for current world demand. Import demand is measured in current US dollars. While some categories are larger than others (for example, vegetable is a much broader classification than coir products), world demand provides a sense of potential market size. Vegetables, as the largest product category, clearly have the most world demand. But shrimp and prawns also perform well for a relatively narrow product category and so they both score a two. Flowers and jute do well for being niche markets, while coir lags behind. They are scored one, one and zero, respectively.

Figure 34 – World Import Demand, 2011.

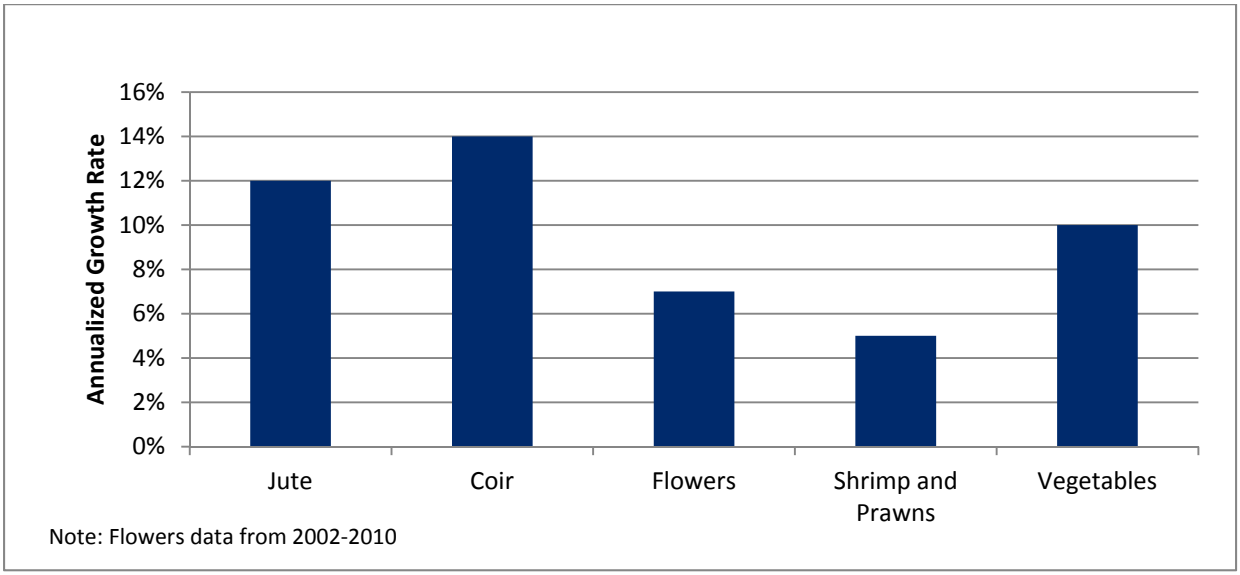


VALUE CHAIN	IMPORT DEMAND (MILLIONS OF USD)	SCORE
Jute	3,920	1
Coir	524	0
Flowers	7,809	1
Shrimp and Prawns	13,588	2
Vegetables	57,333	2

WORLD IMPORT GROWTH RATES

The annualized growth rate of world import demand was used to measure the growth in potential market size for each of the value chains. With all imports worldwide growing at an annualized rate of 12%, coir is clearly leading the group with a 14% annualized growth rate. It thus scores a two in the ranking. Because jute is growing at the average rate it scores a one, and with all other value chains growing below the average rate, they all score zero.

Figure 35 – World Import Demand Growth, 2002–2011.

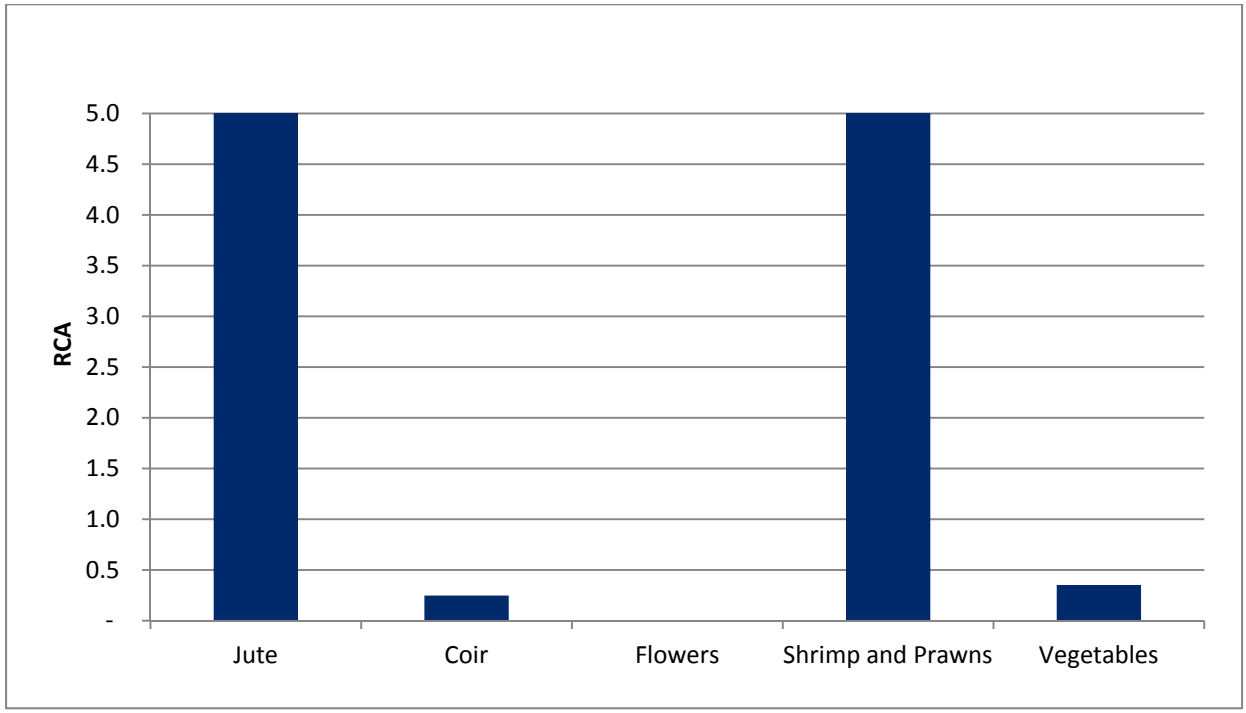


VALUE CHAIN	IMPORT DEMAND GROWTH	SCORE
Jute	12%	1
Coir	14%	2
Flowers	7%	0
Shrimp and Prawns	5%	0
Vegetables	10%	0

REVEALED COMPARATIVE ADVANTAGE (ABSOLUTE)

Revealed comparative advantage (RCA) is measured by comparing the concentration of Bangladesh's exports in jute to the world concentration of exports in jute. If Bangladesh has a higher export concentration in jute than exists globally, then it can be said to have a comparative advantage.[134] If the measured RCA is greater than one, Bangladesh has a comparative advantage. If it is less than one, then it does not. Jute, shrimp and prawns have RCAs well above one and thus score a two. All the other VCs have lost any comparative advantage and therefore score a negative one.

Figure 36 – Bangladesh Revealed Comparative Advantage, 2011.



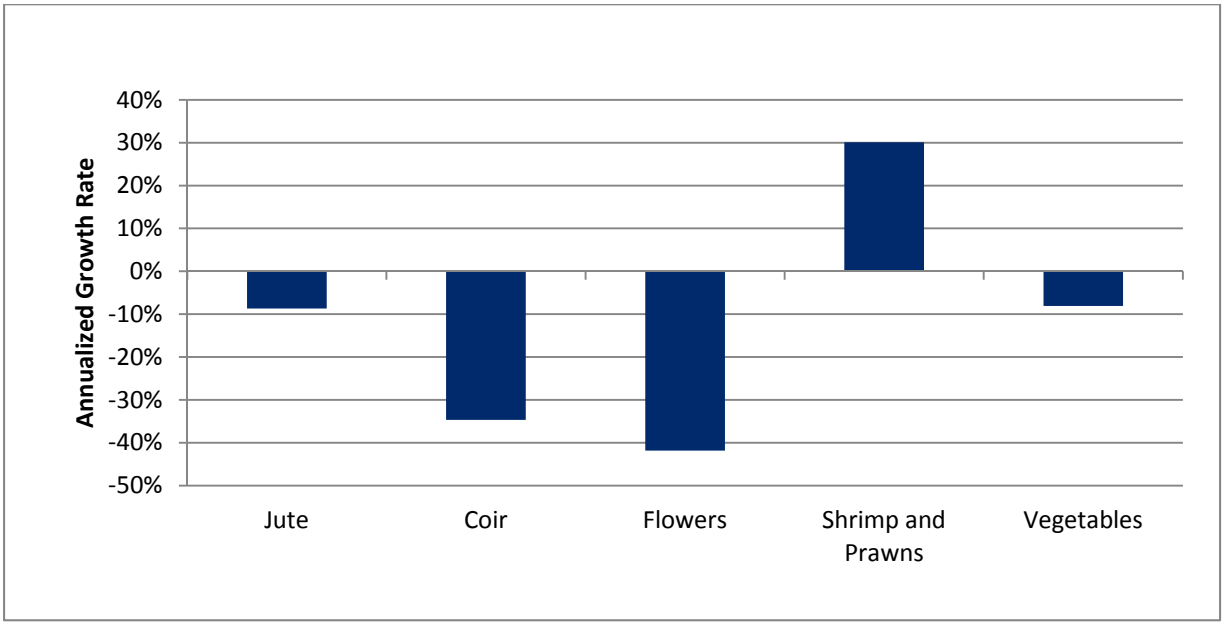
VALUE CHAIN	RCA	SCORE
Jute	61.84	2
Coir	0.25	-1
Flowers	0.00	-1
Shrimp and Prawns	60.55	2
Vegetables	0.35	-1

[134] Mathematically: (Ebj/Eb)/(Ej/E) where Ebj is Bangladesh's exports of jute, Eb is Bangladesh's total exports, Ej is total world exports of jute and E is total world exports.

REVEALED COMPARATIVE ADVANTAGE TREND

RCA is calculated on a yearly basis. Therefore, the direction that an RCA is trending can indicate whether a country is becoming more or less competitive in a given value chain. Although both jute and shrimp maintain significant comparative advantages, every single value chain except shrimp and prawns has seen a decline in its RCA over the past decade. Because shrimp and prawns had an annualized growth of 30%, the sector scores a two. Meanwhile, all other value chains receive a score of negative one.

Figure 37 – Bangladesh Revealed Comparative Advantage Trend, 2002–2011.

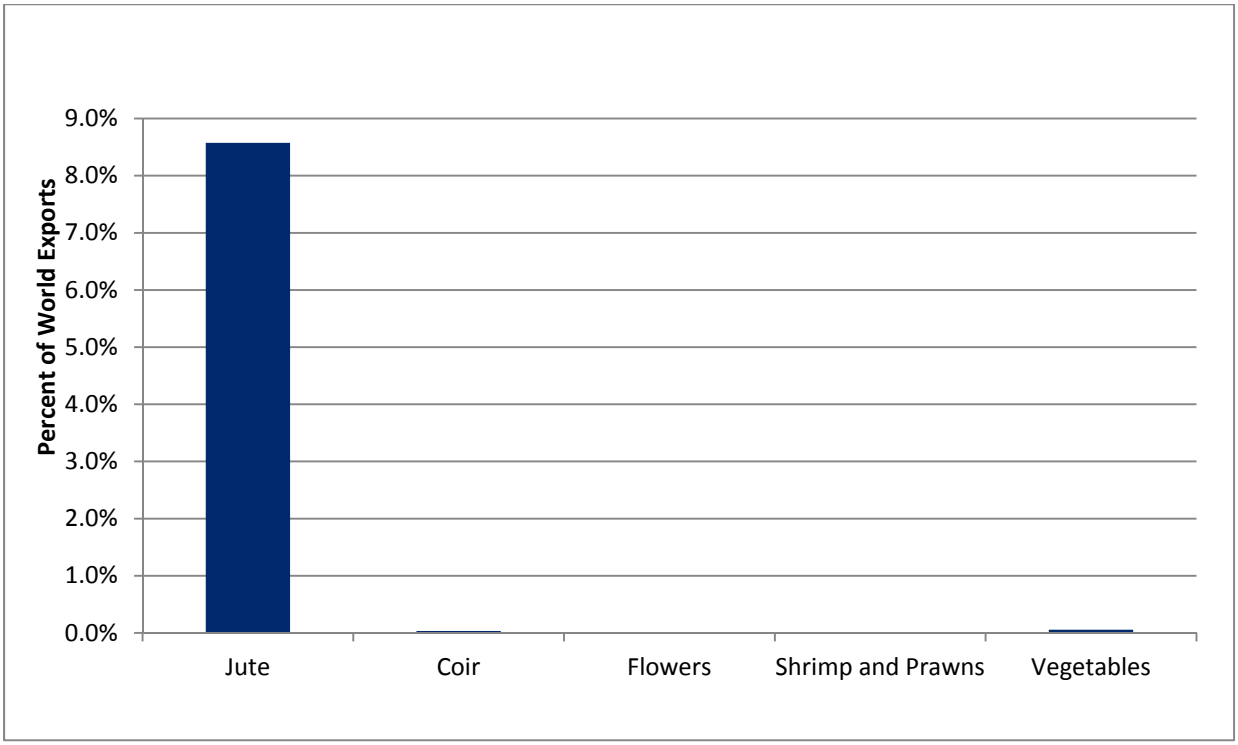


VALUE CHAIN	RCA TREND	SCORE
Jute	-9%	-1
Coir	-35%	-1
Flowers	-42%	-1
Shrimp and Prawns	30%	2
Vegetables	-8%	-1

EXPORT MARKET SHARE

Bangladesh's share of the total export market for each value chain provides an indication of their current strength and the potential room for growth. The country's total export market share is only .14% of world exports. Therefore, jute significantly outperforms the other value chains and is scored a two. Vegetables perform moderately well with .06% of export market share and the sector is therefore scored a one. All other value chains lag far behind and are scored a zero.

Figure 38 – Bangladesh Export Market Share, 2011.

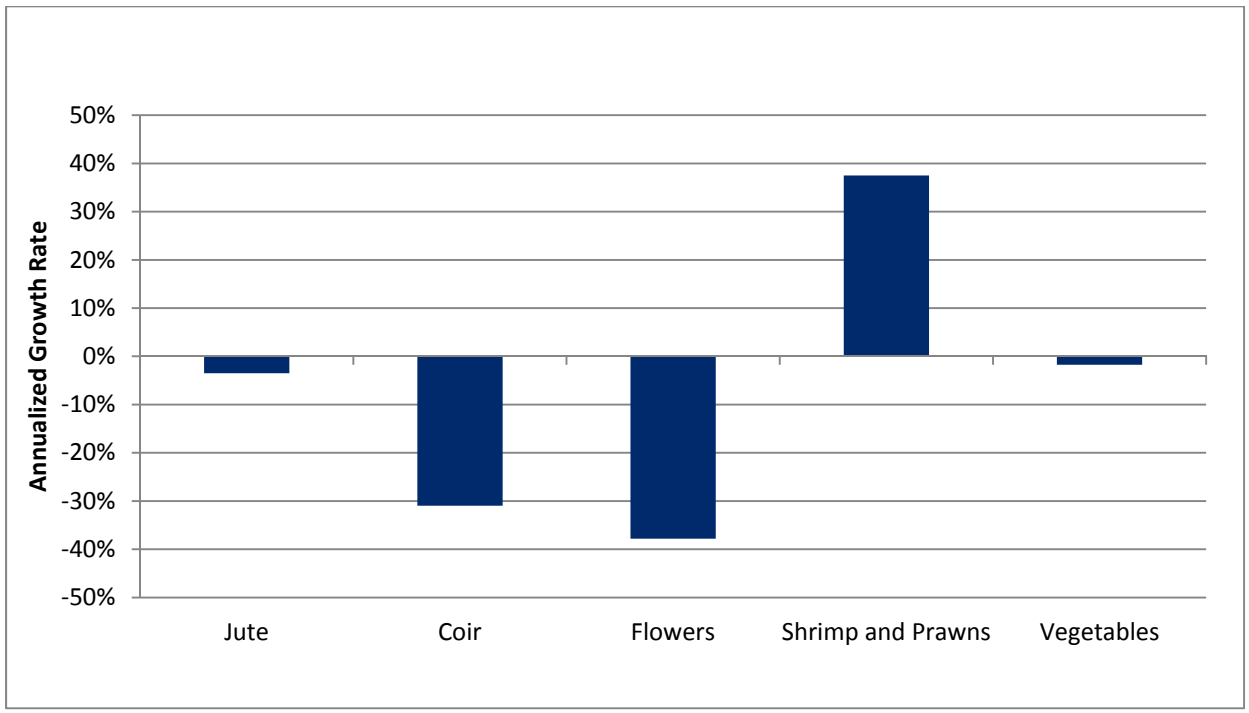


VALUE CHAIN	EXPORT MARKET SHARE	SCORE
Jute	8.57%	2
Coir	0.03%	0
Flowers	0.00%	0
Shrimp and Prawns	0.01%	0
Vegetables	0.06%	1

EXPORT MARKET SHARE TREND

The past growth of a value chain's export market share serves as an indicator of a growing domestic industry that is competitive in world markets. Over the past decade, shrimp and prawns is the only value chain that has seen any growth in export market share, which earns it a score of two. The other value chains have steadily lost market share and are therefore scored a negative one.

Figure 39 – Bangladesh Export Market Share Trend, 2002–2011.



VALUE CHAIN	EXPORT MARKET SHARE TREND	SCORE
Jute	-4%	-1
Coir	-31%	-1
Flowers	-38%	-1
Shrimp and Prawns	37%	2
Vegetables	-2%	-1

TARIFF RATES AND TARIFF PREFERENCE MARGIN

For each value chain, the assessment team looked at the tariffs that Bangladesh faces from the top three world importers, the top three Bangladeshi export markets for that value chain and India. These tariffs were also compared to the most favored nation (MFN) tariff rate in each case and the corresponding preference margin was calculated. An average tariff rate and preference margin was then calculated for each of the value chains. Sometimes, an importing country appears in more than one category. In this case, the country is counted only once in calculating the averages. The average tariff was then scored on the following scale: tariff rates of 0%–1% score a 2, 2%–3% score a 1, and 4%–5% score a 0. For the margin of preference, the scale is inversed: tariff rates of 0%–5% score a 0, 5%–10% score a 1 and 10% and up score a 2. For each country a final average score was then calculated.

Points	VC	Calculation of Tariff Rate and Tariff Preference Margin Score.				
Strong (2 points)	**Shrimp & Prawns**		Country	Bangladesh	MFN	Margin of Preference
		Top 3 Importers of Bangladeshi Products	USA	0%	0%	0%
			Belgium	0%	14%	14%
			UK	0%	14%	14%
		Top 3 World Importers	USA	0%	0%	0%
			Japan	0%	1%	1%
			Spain	0%	14%	14%
		India	India	0%	30%	30%
		Average		0%		12%
		Score		2		2
Moderate (1 point)	**Flowers**		Country	Bangladesh	MFN	Margin of Preference
		Top 3 Importers of Bangladeshi Products	Saudi Arabia	4%	4%	0%
			Vietnam	18%	18%	0%
			India	1%	49%	49%
		Top 3 World Importers	Germany	0%	8%	8%
			UK	0%	8%	8%
			USA	1%	5%	4%
		India	India	1%	49%	49%
		Average		4%		11%
		Score		0		2
Poor to Moderate (.5 points)	**Coir**		Country	Bangladesh	MFN	Margin of Preference
		Top 3 Importers of Bangladeshi	Philippines	9%	9%	0%
			UK	0%	1%	1%

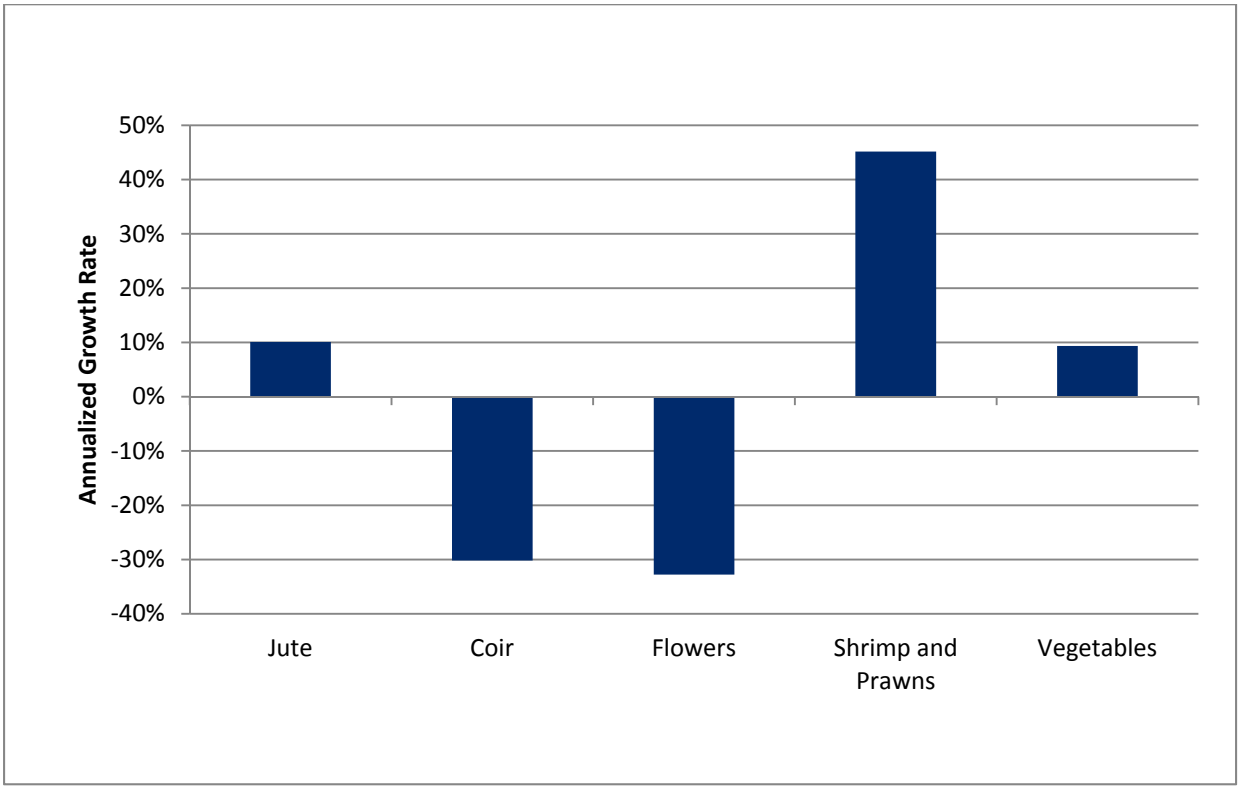
		Products	Spain	0%	1%	1%
		Top 3 World Importers	China	8%	8%	0%
			USA	0%	0%	0%
			UK	0%	1%	1%
		India	India	0%	10%	10%
		Average		3%		2%
		Score		1		0
Poor to Moderate (.5 points)	**Vegetables**		Country	Bangladesh	MFN	Margin of Preference
		Top 3 Importers of Bangladeshi Products	UK	0%	16%	16%
			UAE	2%	2%	0%
			Kuwait	2%	2%	0%
		Top 3 World Importers	USA	2%	5%	3%
			Germany	0%	16%	16%
			UK	0%	16%	16%
		India	India	26%	31%	5%
		Average		5%		7%
		Score		0		1
Poor (0 points)	**Jute**		Country	Bangladesh	MFN	Margin of Preference
		Top 3 Importers of Bangladeshi Products	India	3%	10%	7%
			China	4%	9%	6%
			Pakistan	15%	16%	1%
		Top 3 World Importers	USA	0%	0%	0%
			India	3%	10%	7%
			Turkey	0%	2%	2%
		India	India	3%	10%	7%
		Average		4%		3%
		Score		0		0

Source: ITC Market Access Map.

EXPORT PERFORMANCE

The growth in exports for each of the value chains demonstrates their future prospects for supplying the world market. Although data from 2008–2011 may be under-reporting exports, several of the sectors still show steady growth. From 2002 to 2011, total Bangladeshi exports grew at an annualized rate of 18%. Shrimp and prawns significantly exceed this growth rate, scoring a two. Meanwhile, jute and vegetables fall short and are scored a zero. Coir and flowers registered a negative growth rate and thus are scored a negative one.

Figure 40 – Bangladesh Export Growth Trend, 2002–2011.

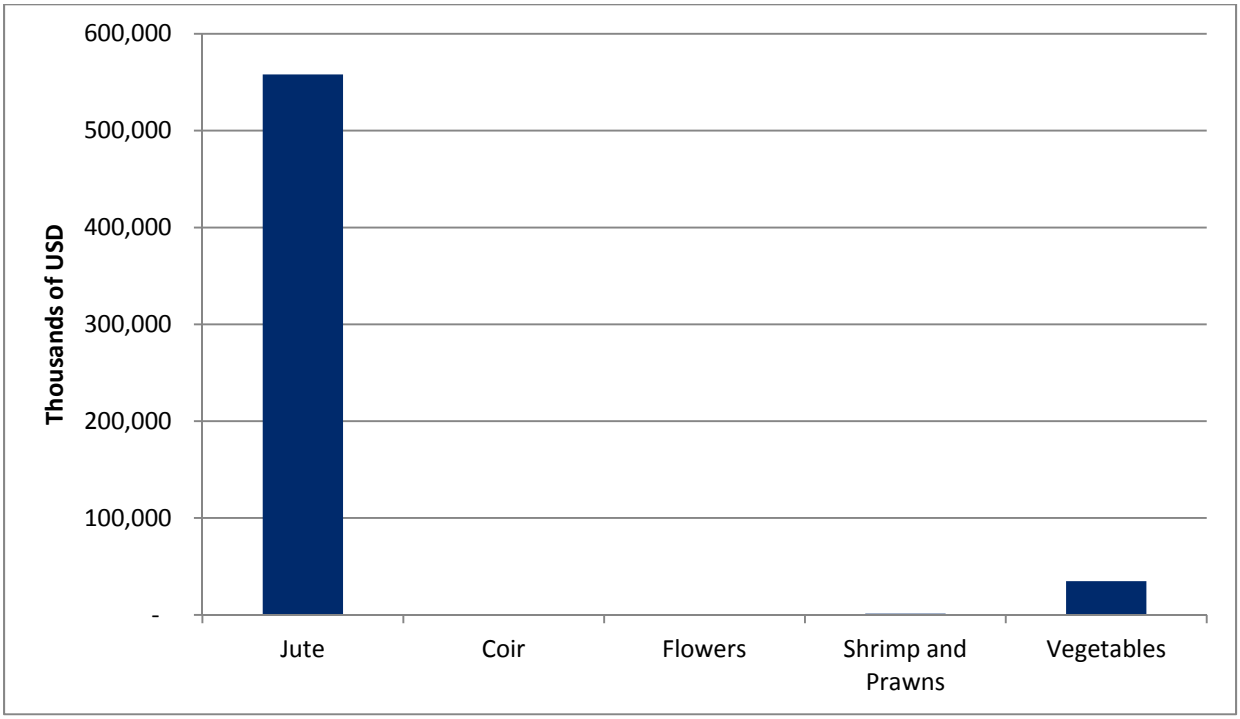


VALUE CHAIN	EXPORT GROWTH	SCORE
Jute	10%	0
Coir	-30%	-1
Flowers	-33%	-1
Shrimp and Prawns	45%	2
Vegetables	9%	0

EXPORT VALUE

The current value of exports of each of the value chains serves as a proxy for Bangladesh's ability to supply the world market. Although Bangladeshi export data since 2007 is often unreliable, it is clear that jute leads the other value chains by a large margin. Therefore, the sector is scored a two, while the others receive a zero.

Figure 41 – Bangladesh Exports by Value, 2011.

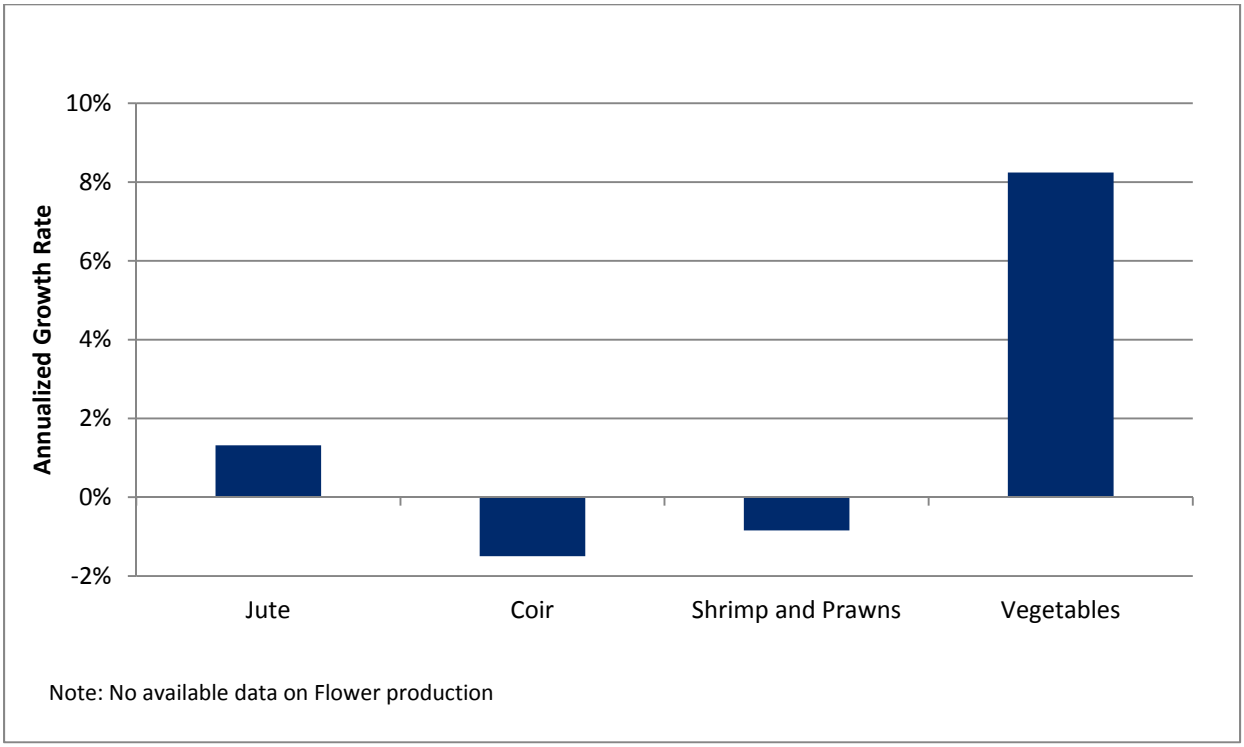


VALUE CHAIN	EXPORTS (THOUSANDS OF USD)	SCORE
Jute	558,114	2
Coir	52	0
Flowers	11	0
Shrimp and Prawns	1,201	0
Vegetables	34,745	0

PRODUCTION GROWTH TREND

Growth in domestic production shows Bangladesh's ability to supply growing world markets. No data was available for flower production, so it was scored a zero. Vegetables showed significant production growth and scored a two, while jute showed slight growth and was scored a one. Coir and shrimp recorded negative growth and thus scored a negative one.

Figure 42 – Bangladesh Production Growth Trend, 2002–2011.

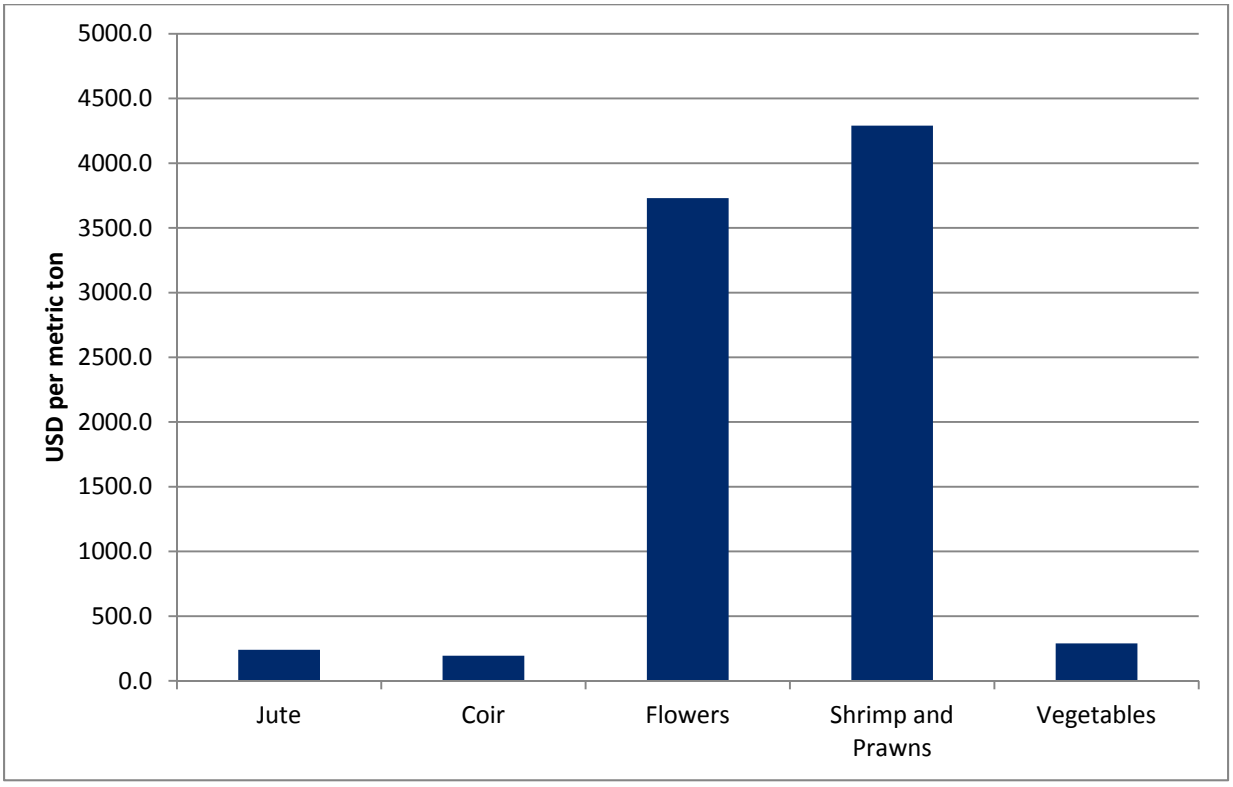


VALUE CHAIN	PRODUCTION GROWTH	SCORE
Jute	1%	1
Coir	-1%	-1
Flowers	NA	0
Shrimp and Prawns	-1%	-1
Vegetables	8%	2

PRODUCTION PRICE

The relative producer prices for each of the value chains determine which have a higher return per metric ton (MT). This serves as an indicator of profitability. Flowers and shrimp and prawns are clearly the most valuable sectors. They are therefore scored a two. Jute and coir, both worth more than USD 200 per MT, are scored a one. Coir, at just under USD 200, is scored a zero.

Figure 43 – Bangladesh Producer Price, 2011.

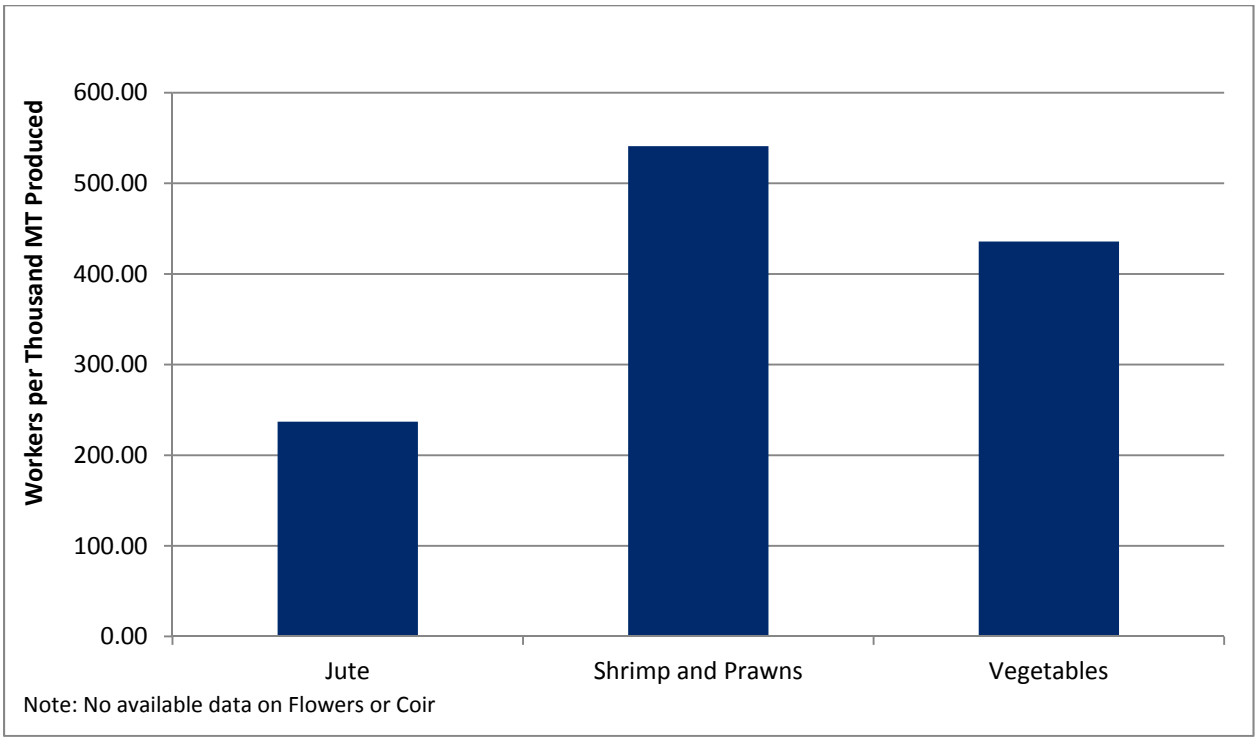


Value Chain	Price (USD per MT)	Score
Jute	239	1
Coir	194	0
Flowers	3,730	2
Shrimp and Prawns	4,289	2
Vegetables	289	1

EMPLOYMENT POTENTIAL

Estimating the labor intensity of production for each of the value chains helps determine which ones will create the most jobs with future growth. Labor and production data was not available for all the sectors. Labor data was collected from the Bangladesh Bureau of Statistics 2010 Yearbook's labor and manpower survey, while production data came from the FAO. However, the labor survey data was from the 2006–2006 fiscal year, so 2006 production data is also included. Because the statistics come from different organizations, they may also have different sectoral definitions. Thus, the labor intensity statistic is a rough estimate. By this estimate, shrimp and prawns clearly show high labor intensity and the sector is scored a two. Meanwhile, the vegetables sector, with more than 300 workers per thousand metric ton, scores a one. Jute, with less than three hundred employees per metric ton, scores a zero. The value chains for which data was not available also scored a zero.

Figure 44 – Bangladesh Employment Potential.

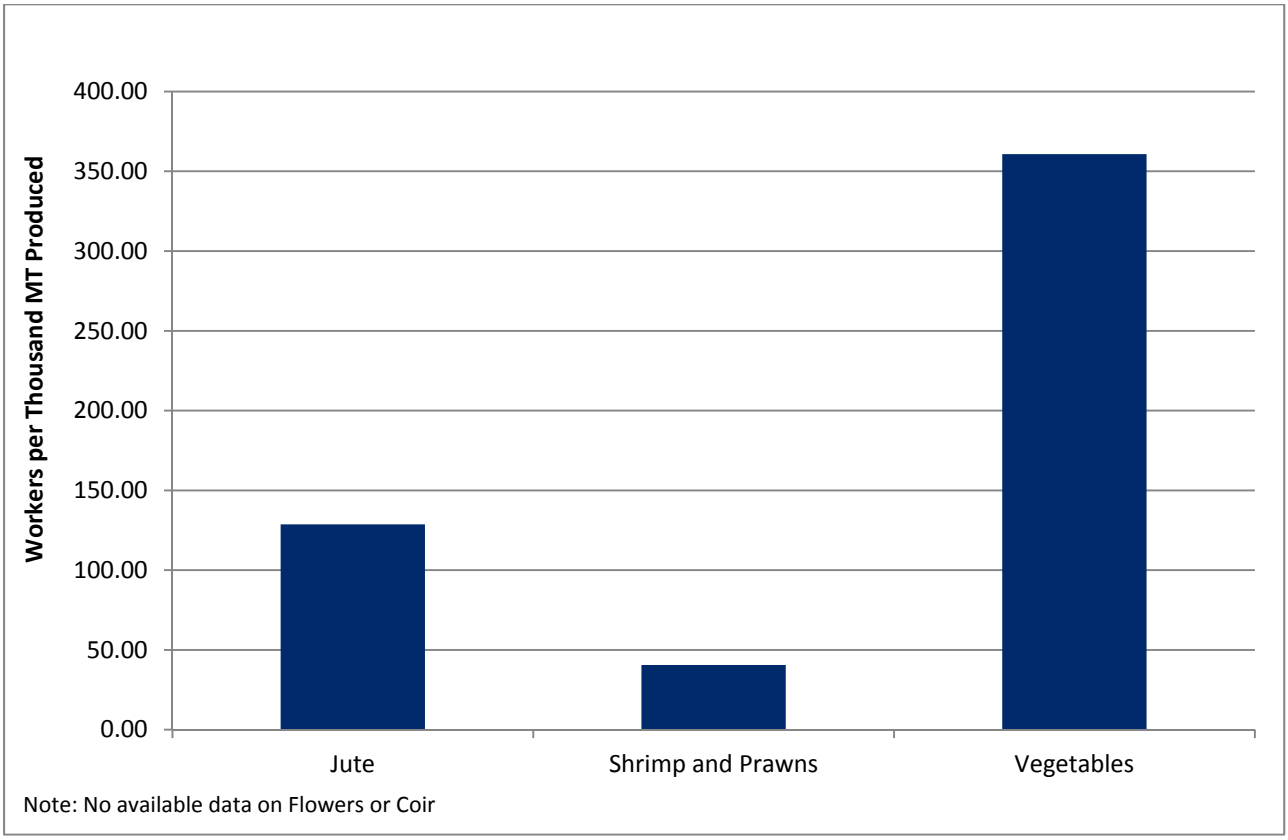


Value Chain	Workers per thousand MT	Score
Jute	237.00	0
Coir	NA	0
Flowers	NA	0
Shrimp and Prawns	541.10	2
Vegetables	435.77	1

FEMALE EMPLOYMENT POTENTIAL

Estimating the female labor intensity of production for each of the value chains helps determine which value chains will create the most jobs for women with future growth. Female labor intensity suffers from the same issues as general labor intensity. However, overall vegetable production appears to employ a significantly larger number of women and thus scores a two. Approximately half of the jute production labor force is female, so it scores a one. Meanwhile, shrimp and prawns employ relatively few women, thus receiving a score of zero. The value chains for which data was not available also scored a zero.

Figure 45 – Bangladesh Female Employment Potential.



Value Chain	Female Workers per thousand MT	Score
Jute	128.71	1
Coir	NA	0
Flowers	NA	0
Shrimp and Prawns	40.60	0
Vegetables	360.80	2

EASE OF SUPPLYING FOREIGN MARKETS

The team scored the FTF regional capacity of supplying foreign markets within this VC. We looked at unique assets, infrastructure, the presence of anchor firms and processing capacity, as well as other indicators of export success relevant to each targeted VC.

Points	VC	Factors Affecting Ability to Supply Export Markets.
Moderate (1 points)	**Jute**	About 20 jute yarn mills are located in the Faridpur region. But there are no composite jute mills in the SWW. There is strong depth at most levels of the jute VC, including: input supply; seed suppliers; farmers (hundreds of thousands), traders (hundreds) and exporters. No cold chain or sophisticated marketing infrastructure is needed for jute.
	Coir	The coir industry in the SSW enjoys great potential due to the high number of producers (about 50,000) and coir rope factories in Bagerhat District. The coir fiber industry extracts raw material from the coconut husk. There are 5 fiber mills and one mattress factory (which uses coir fiber in the Bagerhat District) and dozens of husk traders. No cold chain or sophisticated marketing infrastructure is needed for jute.
Weak (0 points)	**Floriculture**	There are 4,500 floriculture farmers in the Jessore region and about 5 seedling suppliers, as well as hundreds of small traders. However, there is no cold chain in the region. In addition, there are no known private packaging houses with cold storage refrigeration and few trucking fleets with refrigerated trucks.
	Shrimp and Prawns	About 100 fish processing plants are located in the SSW and there are about 90,000 freshwater shrimp farms. Poor refrigerated transport and cold chain, as well as limited HACCP and traceability compliance, limits the ability of the SWW to supply international markets.
	Vegetables	Although it occupies about 8% of the land in the SSW, horticulture accounts for about 20% of farm income. There are hundreds of thousands of fruit and vegetable farmers, and hundreds of local market traders (*aratdars*), as well as rural assemblers and dozens of urban wholesalers and retailers. There are very limited numbers of cold storage packing houses, and very few refrigerated transportation fleets. Only a few farmers and exporters are certified in GlobalGap, a basic entry requirement for most European import markets of fruits and vegetables.

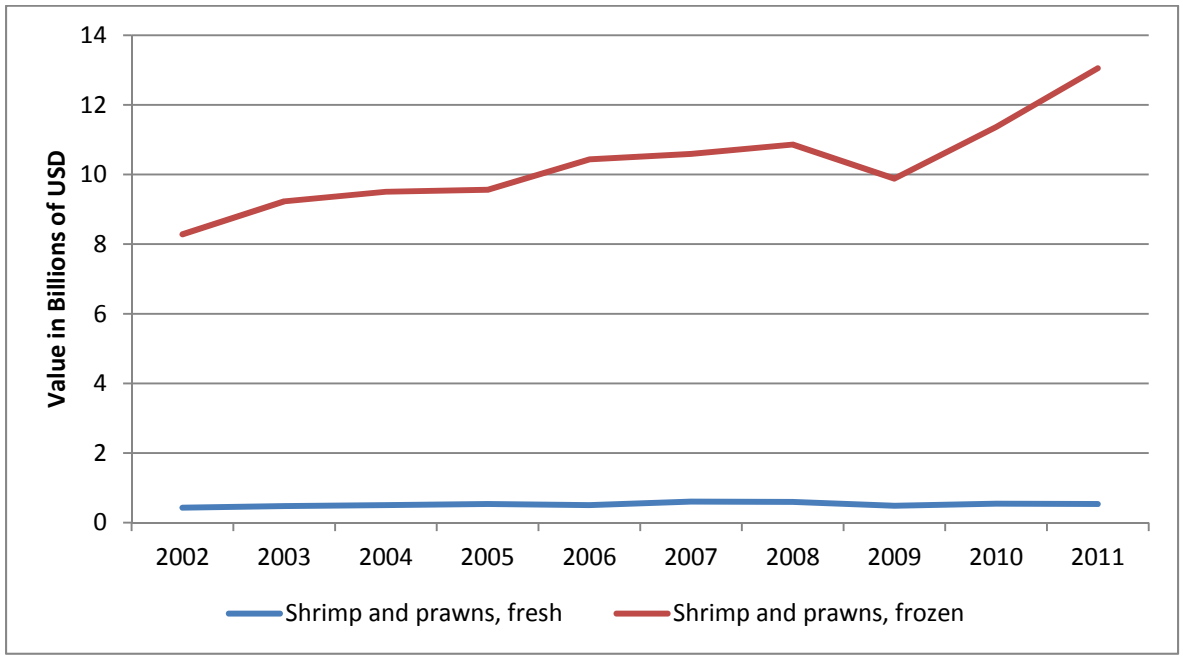
ANNEX 2: AQUACULTURE

GROWTH OPPORTUNITIES

World demand for shrimp and prawns has grown steadily in the last decade, growing at an average annualized rate of 5%.[135] While demand dipped briefly during the global recession, it quickly recovered. The majority of growth was driven by imports of frozen shrimp and prawns, which accounted for 95% of imports.[136] Over the past decade, fresh shrimp and prawns have only accounted for 5% of import demand and have grown at an annualized rate of 2.5%.[137]

Between 2002 and 2011, the top world importers of shrimp and prawns were richer developed countries such as the United States, Japan, Spain and France. However, some of the fastest-growing markets for imports were emerging markets such as Russia (34% annualized rate), Malaysia (20%), Korea (13%) and China (11%).[138] As incomes and urbanization increase in these new world markets, so does the demand for sources of protein such as fish and shrimp.[139]

Figure 46 – Global Import Demand for Shrimp and Prawns, 2002–2011.



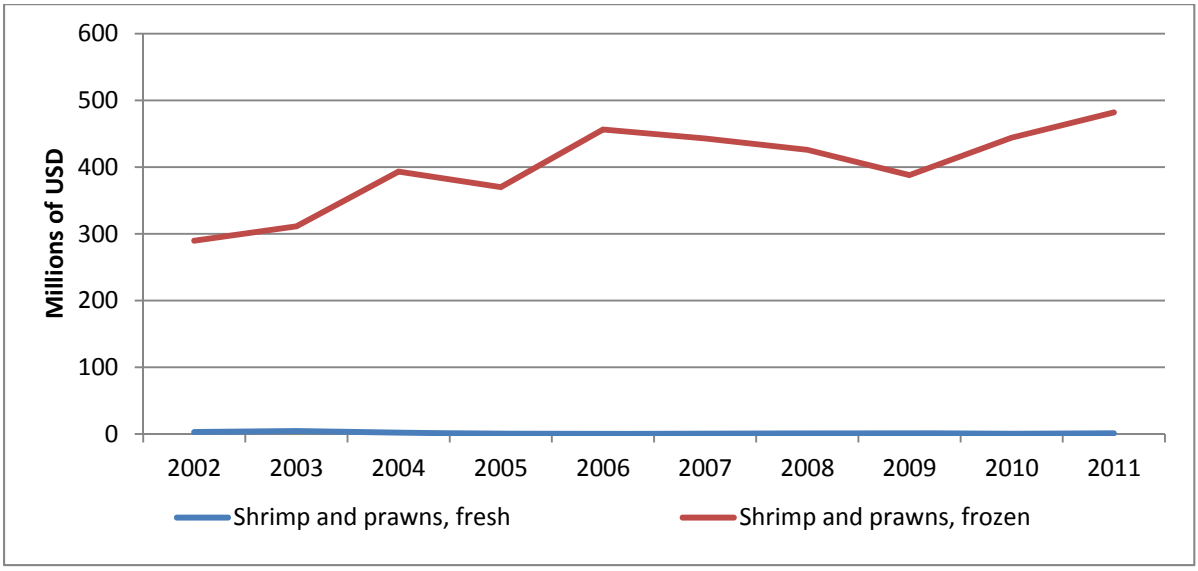
Source: UN Comtrade.

Despite having only a small share of the global shrimp and fish export market, Bangladesh serves some of the largest importers.[140] The top three importers of Bangladeshi shrimp and prawns in the last decade

[135] UN Comtrade.
[136] Ibid.
[137] Ibid.
[138] Ibid.
[139] Delgado, C. et al, "The Future of Fish: Issues and Trends to 2020," International Food Policy Research Institute and WorldFish Center, 2003.
[140] Bangladesh has less than 1% of world market share in exports of shrimp and prawns. ITC Trade Map data.

were the United States (30% of imports), Belgium (22%) and the UK (16%).[141] Demand for Bangladeshi shrimp was similar to world demand, increasing at an annualized rate of 5.7% between 2002 and 2011. It was driven primarily by demand for frozen shrimp and prawns, which accounted for 99% of import demand.[142]

Figure 47 – Import Demand for Bangladeshi Shrimp and Prawns, 2002–2011.



Source: UN Comtrade.

Bangladesh also maintains a strong comparative advantage in shrimp and prawn exports (both fresh and frozen). This indicates that the country is well positioned to grow as an industry, take advantage of international demand and increase its export market share.[143] However, in order for Bangladesh to become a major exporter, it must overcome considerable issues with domestic production and regulation.

PRODUCTION AND EXPORTS

Aquaculture in Bangladesh has changed significantly over the last 10–15 years, evolving from open water fishing to fish farming. This transformation has increased the production and sustainability of the industry. Still, the sector has had difficulties keeping up with the technology required to maintain a competitive position in global markets.

For this study, the assessment team met with farmers and processors of both fish and shrimp. However, the analysis focuses on the shrimp—specifically on *Golda* (freshwater prawn) and *Bagda* (black tiger shrimp). They serve as proxies for aquaculture as a whole. The experience suggests that a given product cluster faces highly similar policy, legal and market distortions that impact on competitiveness along the value chain. The final analysis will therefore show similar results for major aquaculture products.

Aquaculture in Bangladesh is the second-largest export industry by value after readymade garments (RMG), and one with significant potential for rapid expansion in the short to medium term. As of 2012,

[141] UN Comtrade.
[142] Ibid.
[143] Bangladesh had an RCA of 60 in shrimp and prawns in 2011 (a value greater than one indicates a comparative advantage).

there were tens of thousands of farms cultivating fish and shrimp in Bangladesh, generating hundreds of millions of dollars in revenue. As the 12th-largest exporter of shrimp products in the world, the aquaculture industry in Bangladesh employs over one million people and exports to over 63 countries. The domestic market for fish and shrimp is just as large and important as the export market, generating nearly as much income. There are over 142 processing facilities, 96 of which are state-licensed. Those that are not licensed are either in the process of obtaining certification or are being shut down.

The industry is an important source of employment and income, as well as a source of protein for locals. It is also an important source of foreign currency, generating USD 689 million in 2011–2012. Shrimp is the largest contributor to the export revenue of aquaculture, accounting for USD 472 million[144] in the 2011–2012 fiscal year. In addition, aquaculture is an important component of the country's strategy to enhance food security and reduce poverty. This is particularly true in the vulnerable south and southwest, where most of the fish farming takes place and where people rely on it for animal protein.

STRENGTHS

Since the 1990s, the aquaculture industry has received support amounting to hundreds of millions of dollars. Donors have financed programs for health and nutrition, product diversification, market access and development, maintenance and preservation of mangroves and other natural areas used for aquaculture. They have also supported adaptation to climate change, poverty eradication and competitiveness initiatives. Although donor support has often been redundant, it has been effective in preparing the industry to expand export markets. The industry has more than doubled in size since the mid-1990s and has gone from barely USD 261,000 in export earnings in 1972 to USD 625 million in 2010–2011[145]. This provides a strong foundation for rapid growth.

Other key strengths in the aquaculture value chain include:

- Of the 96 processing plants licensed by the government of Bangladesh (GOB), 44 are certified for export to the United States and 76 are certified for export to the European Union. The licensed plants collectively account for 286,000 million tons (MT) of installed processing capacity. At current capacity utilization and market prices, this represents a potential of USD 2.5 billion in export sales.

- Bangladesh is one of the most water-intensive countries in the world, providing ample area for further development of aquaculture.

- Given the rise in water salinity, shrimp farming does not face diminishing productivity, unlike other agricultural products.

- A large swath of shrimp and fish production in Bangladesh is organic by necessity, which allows for innovative processors to tap into a growing organic market in Europe and Asia. One such processor, Mostafa Organic Shrimp Products, Ltd., produces to strict organic standards and is certified organic by the EU. Mostafa is a contract producer for the German company WAB Trading, which purchases its entire output for sale in Germany and Switzerland.

- The Bangladesh aquaculture industry (particularly the farming component of the value chain) has not received as high a level of subsidies as other agricultural value chains. Although shrimp and fish farmers complain about such discrepancies, lack of support by the GOB has forced them to

[144] Bangladesh Export Promotion Bureau, 2011–2012 Export Performance Statistics.
[145] Bangladesh Frozen Foods Exporters Association.

find market-based solutions to problems. The processors, however, do receive subsidies based on export sales.

- In interviews, industry representatives repeatedly stated that shrimp produced in Bangladesh is especially appreciated in certain developed markets of Europe and Asia. This provides opportunities for product and country branding.

- Women are actively engaged in the aquaculture industry, both in farming and processing the fish and shrimp. Men carry out most of the farming activity, although some women are also involved. However, most of the line workers at processing facilities are women. As the industry grows, there will be opportunities to bring more women into the workforce. The jobs available on the farm and at the processing plants are good sources of income and economic security.

- Farmers can raise shrimp for half the year on the same land on which they grow rice during the monsoon, which usually runs from Jute to October. Both activities are complementary in the agricultural calendar.

Box 4: The Collect, Process and Ship Model

Mostafa Organic Shrimp Products Limited in Satkhira is processing and selling shrimp into the EU market using a business model similar to that used by cut, make and trim (CMT) RMG producers. Through a contracting relationship with the German company WAB Trading, Mostafa collects, processes and ships the shrimp to ports in the EU for sale in Germany and (to a lesser extent) other countries. WAB identifies, trains, oversees, and directly pays 1,500 small farmers who raise black tiger shrimp on farms throughout the southwest of Bangladesh. To ensure quality and adherence to strict product standards, WAB has hired 150 trained extension agents who monitor the growing and harvesting of these shrimp. Mostafa, on the other hand, hires, trains and pays its local Bangladeshi staff (mostly women) to process and package the shrimp and prepare it for shipment to WAB's customers in Europe. Essentially, WAB pays for all of the expenses of raising, packaging and transporting the shrimp except for the direct and indirect labor associated with the processing factory. This process - 'collect, process and ship' -- is similar to the CMT model that has been used effectively in jump-starting and developing the RMG industry in Bangladesh and around the world.

Advantages

- Lower initial investment
- Lower recurring investment
- Little to no procurement responsibility
- Simplicity of operation
- No exporting responsibility
- Less overhead expense
- No need for marketing

Disadvantages

- Lower margins
- More risk with fewer buyers
- Lack of familiarity with outside markets, limiting future growth into new markets
- No control over input deliveries
- Little to no knowledge of final buyers, markets and prices

WEAKNESSES

Quality and SPS Challenges

Aquaculture in Bangladesh has a number of weaknesses that hinder its development into a more competitive, world-class industry. The sector has suffered from food safety and public relations setbacks in the past 15 years. The first one was in 1997 when the EU banned imports of fish products from Bangladesh following inspections by EU authorities. The inspections revealed deficiencies in hygiene at processing facilities, including insufficient oversight by the GOB. This ban was lifted six months later for plants that met EU food safety regulations. In 2009, the Bangladesh Frozen Foods Exporters Association (BFFEA) placed a self-imposed ban in order to remove the antibiotic nitrofuran, which had been detected by some European importers. The ban, which lasted eight months, sought to remove all nitrofuran-laced shrimp and ensure that the antibiotic would no longer be used in fish feed.

In 2007, the American Federation of Labor and the Congress of Industrial Organizations (AFL-CIO) of the United States filed a petition with the office of the US Trade Representative (USTR) demanding that Bangladesh lose its eligibility for the Generalized System of Preferences (GSP) because of alleged violations of workers' rights, labor standards and child labor laws, as well as harassment of trade unions. The petition has dragged on for several years and remains under review by the USTR.

In July 2012, the US Department of Labor's Bureau of International Labor Affairs (ILAB) raised the issue of forced labor in the Bangladeshi shrimp industry by undertaking a study that addressed indicators of forced labor in the supply chain of the country's shrimp industry. This study, which was being prepared in the summer of 2012 and due for release in the fall, sought to investigate a range of labor rights violations highlighted during the GSP review process. The study focused on why workers in the sector are more vulnerable to exploitation.[146]

Raw Material

The basic raw material for the production of shrimp is fries or *post larvae* (PL), known locally as *'pona'*.[147] There are 60 to 80 operating hatcheries in Bangladesh that produce PLs, most of which are located in and around the coastal town of Cox's Bazar. Most of the shrimp ponds and processing plants are in southwestern Bangladesh, a distance of about 700km from Cox's Bazar.

However, most of the PLs used at fish farms in Khulna and surrounding areas still come from Cox's Bazar, which not only poses a significant logistical challenge, but is a costly proposition for fish farmers. The cost of the PLs can account for as much as 50–60% of the production cost for shrimp. This is due to high transportation costs, as well as the high mortality rate of 25–40%.

The PLs are transported in containers of 5,000 specimens, sometimes by road and often by air from Cox's Bazar to the Jessore airport. During transportation, there is a mortality rate of around 20%. This loss is the result of poor handling, as well as viral infections. Proper equipment and better training could reduce the loss.

In the last five to seven years a number of hatcheries have emerged in and around Khulna and other areas of the southwest. There are now approximately 20 hatcheries in the Khulna area that supply producers in the area. These hatcheries have faced a number of challenges getting started and some

[146] The final report has yet to be released to the public as of January 2013.
http://www.dol.gov/_sec/media/congress/20120719_biel.htm
[147] The unit of measurement is PL per 1000. For simplicity's sake, we are using the terms simultaneously.

have had to shut down temporarily due to viruses and other operating problems. One new hatchery, which made a BDT 1.5 million (USD 18,421) investment in 2007, recently suspended production after losing more than 50% of its stock of larvae.

Land Constraints

One of the limiting factors on the industry is the small parcels of land that are leased out to farmers. The average size of a fish/shrimp farm in Bangladesh ranges from 0.3 hectares for a small subsistence farm to 3.0–4.0 hectares for an average marine farm. The picture below shows a pond (farm) of about 0.4 hectares, which might yield 140 kilograms (kg) of *Golda* per season by relying on traditional farming methods.

In most cases, fish and shrimp farmers begin farming under short-term leases of 1–3 years. There is no government policy that encourages landowners to offer land for longer leases. Given the uncertainty in the rural economy, landowners are making a rational economic decision by not offering leases longer than three years. Without rights to long-term land, the lessee has little incentive to invest in infrastructure, such as pump and filtering systems, holding tanks and waste treatment systems. In addition, few if any banking institutions will offer credit to farmers with short-term leases. Ideally, leases for aquaculture farmland would have a minimum of 30 years, thus ensuring the lessee farmer a significantly longer period to recoup the investment.

A shrimp pond outside of Khulna in southwestern Bangladesh.

Photo: CARANA.

***Golda*, or freshwater prawn, harvested at a fish farm outside of Khulna.**

Photo: CARANA.

Additional weaknesses in the aquaculture value chain include the following:

- Shrimp and fish processors have been working at 18–25% of capacity for most of the last ten years. Many theories have attempted to explain this situation. The most credible one is that export subsidies[148] for processors have encouraged over-building of processing facilities without a commensurate increase in supply from the farmers.

- Access to credit for production is difficult and loans to significantly increase production levels are nearly impossible to obtain. Aside from commercial bank credit, there are a number of NGO credit facilities available to farmers. But most credit lines are so low that they can only support subsistence farming. The GOB has special capped lending rates and quotas for banks to support agriculture, but aquaculture is excluded.

- Market and technical information is lacking for farmers, especially for small-scale farmers—those with 1.0 hectare (2.4 acres) or less.

- Although Bangladesh is starting to export more prawns, shrimp and fish to regional markets, there is still an overreliance on the US and EU markets.

- Small-scale farmers are unwilling to increase from one annual crop of shrimp to two because the potential second crop competes with rice production, the staple that feeds the household. Growing rice allows the risk-averse small farmer to avoid buying in the market at an unknown price.

- Most small to medium-sized fish farmers sell to intermediaries at local depots. Larger farmers can sell directly to processors or go to auction with their product. Some intermediaries provide services for their fees. Some depots act as sanitary facilities located near farming communities.

[148] The GOB provides a subsidy of 12% on the farm gate value of fish and shrimp that is exported. This subsidy goes directly to the processors who, in turn, are expected to return a portion of it to the farmers. In reality, this almost never happens, according to processors and farmers.

The farmers can bring their catch and have it inspected, washed and iced before packing it for delivery to the processor. However, not all depots provide such services. Those that do offer services may exploit geographic monopolies, farmer ignorance or power relations based on credit given to farmers. In a 2011 study, Nesar Ahmed of Bangladesh Agricultural University determined that commission agents, processors and wholesalers made the highest average profit. These were followed by retailers and ultimately by the farmers themselves[149]. A World Bank competitiveness study from 2004–2005 reported similar findings. Interviews during this study told essentially the same story.

- Most farms lie in rural areas where there is limited electricity and there are no facilities for cooling or icing the product. This means the farmer needs to rush his catch for the day to the nearest depot so it can be preserved. With poor roads and unreliable transport, much of the catch spoils before arriving at a processing facility.

- Although the assessment team met processors with traceability systems in place, this was not common and only one of them was internationally certified. Most processors do not know the source of all of their fish and shrimp. This limits access to international markets that might be interested in buying from Bangladeshi producers.

As a result, the quantity of shrimp exported in 2010 was not significantly greater than that of 2004.

[149] Ahmed, N., **"**Marketing Low-Value Cultured Fish In Bangladesh", Department of Fisheries Management, Bangladesh Agricultural University, 2011.

A marketplace with small depots and auction centers on the highway between Khulna and Satkhira.

Photo: CARANA.

A roadside market near Khulna where farmers sell their goods.

Photo: CARANA.

BOX 5: SHRIMP FARMING: A DOLLAR A DAY

Field interviews showed that a small subsistence farmer's 0.75-acre (0.30 ha) pond yields about 120 kg of *Golda* per season. Since *Golda* prawn take at least six months to mature, farmers can harvest only one season of product per year. The farmer typically receives around BDT 750 (USD 9.21) per kg of *Golda*, or about BDT 90,000 (USD 1,105) in total. His costs include:

BDT 15,000 – land lease
BDT 22,000 – stock
BDT 27,500 – feed
BDT 64,500 – total cost

The labor is undertaken by the farmer, who also transports the harvest to a market of depots and auctions by way of a rickshaw. Thus, the annual income from shrimp farming is BDT 25,500, or about USD 318.75 (USD 0.87 per day).

Most subsistence farmers make additional money selling excess rice and vegetables. In the cases studied here, this totaled around BDT 10,000. The farmer's annual income then amounted to BDT 35,500, or USD 443.75, which is about USD 1.22 per day.

CHALLENGES

To reach a level of sustainable competitiveness, the fish-farming industry must face a number of challenges, in addition to addressing the weaknesses discussed previously. Some of the more significant challenges are described in detail below.

As noted previously, the EU imposed a ban on the sale of Bangladeshi shrimp due to deficiencies in hygiene at processing facilities and insufficient GOB oversight, and the AFL-CIO filed a petition to the USTR against Bangladesh due to allegations related to violation of workers' rights, labor standards, child labor laws and harassment of trade unions. While some of these issues have been successfully resolved, and others are close to resolution, there may be a residual perception of poor hygiene or improper labor practices in the country's aquaculture industry. This could be resolved with an aggressive campaign to rebrand Bangladeshi exports.

Even if Bangladesh has good-to-excellent labor standards and the rights of workers are upheld, the bad labor practices and human trafficking uncovered in countries such as Thailand could negatively impact Bangladesh.

Weak implementation of environmental rules by actors across the value chain and even weaker enforcement of environmental regulations on the part of government agencies is a serious challenge in the short term. Incentives for processors to improve environmental or hygienic standards come only after sales are lost and markets closed due to import bans.

Perhaps the most difficult challenge will be to bring the small subsistence farmer into the mainstream by scaling up production and providing opportunities for access to regional and international markets. Many of these small farmers produce very small quantities, earning one to two dollars per day (see Box 5). This figure usually includes additional income from rice and vegetable production.

OPPORTUNITIES

Field interviews suggest that the industry is poised to accept and implement innovative solutions, including the introduction of mobile technology to help deliver technical and market information to farmers and other key players in the market. This could allow farmers who do not face a geographic monopoly to bypass some of the exploitative middlemen.

The RMG sector has contributed to the enhancement of the Bangladeshi country brand. As the second-largest RMG producer in the world, the fish and shrimp industry has also grown and begun to deliver quality products. The country therefore has a unique opportunity to rebrand itself.

As part of a rebranding exercise, Bangladesh could implement internationally recognized certification for exporters. They would be prepared to set up a chain-of-custody scheme to guarantee a combination of organic production, environmental sustainability, exclusion of child labor and respect for workers' rights.

There is also an opportunity to break into regional markets, including China and Japan, and thus minimize Bangladesh's overreliance on the US and EU markets.

CONCLUSIONS

The author of this section spent several weeks in 2004 on a similar assessment for the World Bank. The most striking difference between the shrimp sector in 2012 and 2004 was how little the value chain structure had changed. However, there are now a few world-class processors able to compete with the best factories in Thailand or Vietnam. But they will need to process enough quality product at the plant to exceed the 20% capacity utilization, which remains unchanged since 2004.

Another striking similarity to 2004 is the continuing influence of intermediaries in the value chain, with the commission agent still playing an important role. It is not uncommon for commission agents to act as lenders of last resort for some of the larger processors because of the lack of credit for all but the largest companies.

The aquaculture industry in Bangladesh should have no problem exporting at its current level. However, it would be able to increase that level if the GOB and industry leaders worked together to rebrand the sector and eliminate some of the policy constraints detailed below:

- Make aquaculture eligible for capped lending rates and finance quotas from banks supporting agriculture.
- Convert at least part of the export subsidy into grants to:
    - improve aquaculture extension to the farmer.

- provide incentives for longer leases of land by cutting taxes, which is politically easier than undertaking land reform.

Mobile technology also shows potential to transfer some market power to farmers by providing them with information that will allow them to make informed choices.

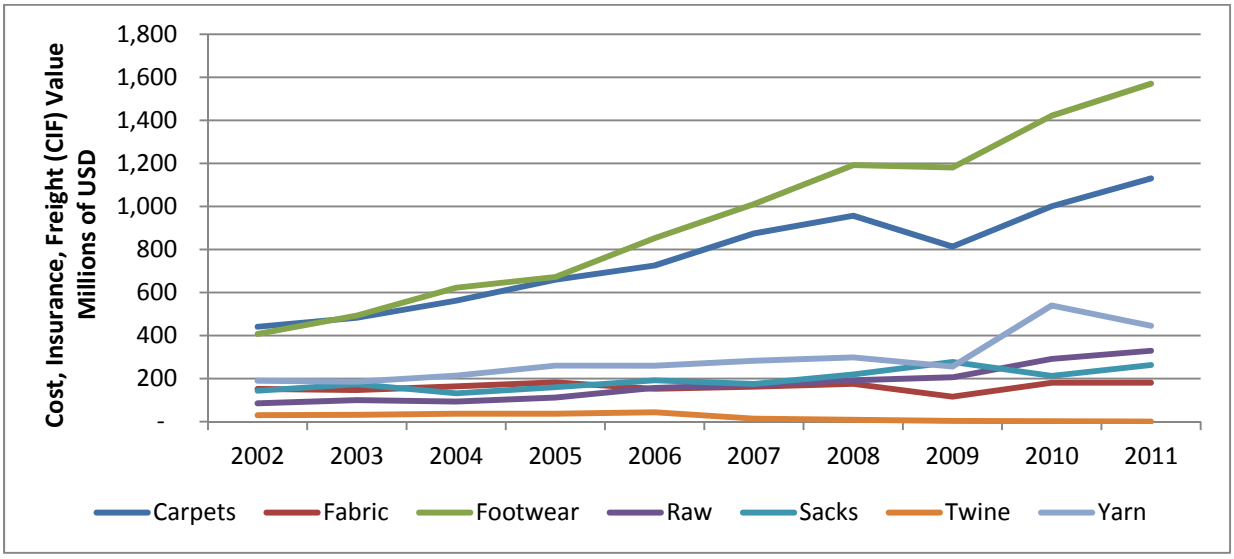
ANNEX 3: JUTE

GROWTH OPPORTUNITIES

Although Bangladesh dominates world raw jute exports, global demand (measured in total value of imports) is led by value-added jute diversified products (JDPs) such as carpet backing, yarn, shoes (both the fabric and soles of espadrilles), fabric, sacks and twine. Bangladesh has made significant efforts to move into these market segments and has historically held a comparative advantage in most jute products. However, the mismanaged mill industry has failed to capitalize on growth areas. From 2002 to 2011, Bangladesh's revealed comparative advantage (RCA) eroded in every category. In some segments, such as carpets and footwear, the country no longer maintains a comparative advantage.

In the last decades, the fastest areas of demand growth in the jute industry have been JDPs. Unfortunately, the data on imports of several products is imperfect because jute carpet backing is tracked under Harmonized System (HS) Code 570500 ("carpets and other textile floor coverings not elsewhere specified"), whereas jute footwear is included in HS 640590 ("footwear not elsewhere specified"). Both commodities include many non-jute products.

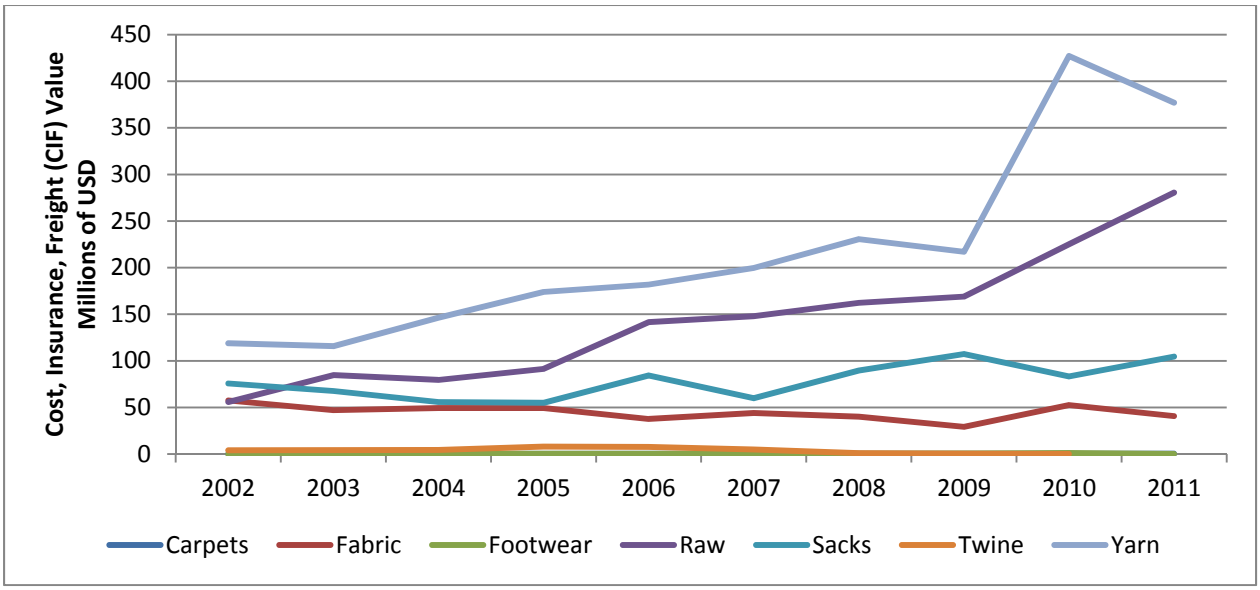
Figure 48 – Global Imports of Jute Products in USD, 2002–2011.



Source: UN Comtrade.

Global imports of raw jute have increased. But the high value-added products such as carpet backing and footwear, as well as yarn and sacks, have accounted for a larger and growing share of global imports by value (see Figure49). The growing demand for these JDPs will necessarily increase the demand for raw jute. Still, there is little demand for Bangladeshi produced jute carpet backing or footwear (see Figure 50). In fact, the only products for which Bangladesh has seen demand growth are yarn, raw jute and jute sacks.

Figure 49 – Global Imports of Bangladeshi Jute Products in USD, 2002–2011.



Source: UN Comtrade.

Jute yarn is a promising growth area for Bangladesh as it retains a strong comparative advantage in this sector. Meanwhile, world demand for jute yarn has been increasing, although it dipped slightly in 2011. Sack products show somewhat less potential, with lower global demand growth and a substantial decline in RCA for Bangladesh. However, if the country could leverage its experience in the readymade garment (RMG) industry to improve its competitiveness in carpet backing and footwear manufacturing, it might capitalize on two potential growth areas.

Currently, many of the major importers of raw jute from Bangladesh are also the top exporters of JDPs. In 2011, India was the leading importer of raw Bangladeshi jute, accounting for one-third of total imports. It was followed by China and Pakistan, each accounting for a quarter of imported Bangladeshi raw jute.[150] That same year, China was also the top exporter of jute-based carpets (55% of world exports) and footwear (75%), while India was the second-largest exporter of carpets (8%), and the leading exporter of jute sacks (37%) and fabric (60%). This suggests that much of the raw jute imported from Bangladesh is used to manufacture the higher value-added jute products exported by China and India.

One of the continuing threats to the jute industry, and Bangladesh in particular, is the rise of synthetics such as polypropylene, which can be made into fibers for sacking or carpet backing. In the carpet-backing industry, jute initially lost ground to synthetics due to unreliable supply.[151] Over time, synthetics built on this initial market share through technical advancements that allowed suppliers to provide a comparable or higher quality product at lower prices than jute producers. The primary reason for the sack industry's shift toward synthetics was the large price differential.[152] Although synthetic sacks are generally of lower quality than jute, they are more easily produced on short notice, providing more reliable sourcing.

[150] Own calculations from UN Comtrade data on imports of raw jute (HS530310 and HS530390) from Bangladesh.
[151] IFC South Asia Enterprise Facility, "Bangladesh Jute Industry: Opportunities for Improved and or New Industrial Applications," December 2005.
[152] Ibid.

The Bangladeshi RMG industry has grown and captured market share because it was able to reliably meet short delivery deadlines and remain price competitive. The jute industry must focus on these two factors if it hopes to expand exports and take market share from competitors like India and China. Although there is little information on export prices of JDPs, the data shows that Bangladesh maintains competitive raw jute export prices. Combined with the country's low labor costs, this could give it a strong advantage in the manufacturing of value-added products.

The greatest opportunity for the jute industry is to expand the manufacture of diversified products, which have become increasingly popular. In some cases (sacks and carpet backing) this could mean competing with the well-established synthetics industry. Due to the ability of synthetic producers to produce large volumes on short notice, the jute industry may not be able to gain much market share. However, jute has the advantage of being a renewable natural resource, which could alter the behavior of customers who typically prefer synthetics. Another opportunity for Bangladesh is to target value-added products manufactured by the major raw jute customers. This includes carpet backing, footwear, sacks and fabric that are currently manufactured in China and India. Bangladesh's success in the RMG industry suggests that targeted interventions in the marketing and production of JDPs could lead to export growth.

PRODUCTION AND EXPORTS

Jute is a cultivated single-stemmed plant growing to a height of 3.5 meters (11.4 feet) and containing commercially important fibers. Once separated from the rest of the plant, the fiber can be processed into a variety of products including yarn, sacks, paper, knit and woven cloths, and carpet and linoleum backing.

The jute industry in Bangladesh has a long and complicated history. The climate and terrain are uniquely suited to the production of high quality jute. In 2011–2012, 47% of the jute produced in Bangladesh came from the south and southwest, with the highest quality Tossa jute coming from the Faridpur District.[153]

Traditional retting of jute on a road between Khulna and Jessore in southwestern Bangladesh.

Photo: CARANA.

Jute is primarily grown by smallholder farmers who accounted for approximately 1.1 million households as recently as 2005.[154] Cultivation takes place during the rainy season, with the seed sown between February and May. The harvest takes place from July to October. Growing and initial processing is labor intensive and usually performed by the entire household. Once the jute is harvested, it is bundled and left to dry before removing the leaves. Then the jute is soaked as part of the post-harvest 'retting' process. Retting is best performed in slow-flowing freshwater. Jute farmers tend to use any body of water large enough to

[153] CARANA calculation based on Bangladesh Bureau of Statistics (BBS) estimates of jute production by region, 2011–2012
[154] Islam, K. and de Silva, H., "Jute Value Chain in Bangladesh: Information and Knowledge Gaps of Smallholders," December 2011.

accommodate their crop. Unfortunately, muddier or more saline water can damage the jute and reduce the quality of the fiber. Traditional retting takes 12–15 days, after which the fiber is separated manually from the sticks. After the fiber is cleaned and dried, it is bundled and ready for sale.

Because smallholder farmers are behind most jute production, several middlemen handle the sale before it reaches the mill. Bangladesh has a well-established network of small-scale jute traders who buy directly from farmers. There are also medium-scale traders aggregating from farmers and small-scale traders. Downstream, larger traders or mill agents purchase from intermediaries or, on rare occasions, from large-scale farmers. These traders not only supply the mills, but also sell directly to exporters.

As of 2012, Bangladesh had 141 mills in operation, of which 117 were privately owned. The remaining 24 were state-owned. Of the private mills, 58 were exclusively spinning mills. The remaining 59 private and 24 state-owned mills were producing both yarn and higher value-added jute goods.[155]

Jute is primarily an export crop. From 2000 to 2010, Bangladesh exported 40% of its annual raw jute production.[156] Because it is a durable non-perishable good, exports are typically transported by ship, mainly from Chittagong Port, although some is exported from Mongla Port. Jute's durability means that storage is relatively easy, although most farmers lack the necessary space. The jute is often stored either by larger traders or at jute mills that supply fiber to the mills year-round.

Jute's importance in the economy of Bangladesh peaked in the 1970s shortly after independence, when it reached 70% of total agricultural exports.[157] During this period, the entire jute industry was nationalized. However, many jute mills suffered under public management, taking on large commercial loans they were unable to pay back. When the mills began to be privatized in 1982, they carried with them a large debt burden. Throughout the 1980s and 1990s, synthetics emerged as a major competitor, significantly reducing jute exports. By 1990, jute had fallen to 20% of total exports by value in Bangladesh, and subsequently declined to less than 5% in 2000.[158]

However, the industry has begun to make a comeback in part due to the rising costs of synthetic substitutes and the increased demand for environmentally friendly products. In the 2011–2012 fiscal year, jute and jute products[159] accounted for 3% of total exports from Bangladesh.[160] The decrease in export share in the last decades is due in part to the growth of the RMG industry, but also to the fact that the average[161] wholesale price of jute, as reported by the Department of Agricultural Marketing, has fallen since the early 1990s.[162] This trend reversed at the end of the last decade. Rising demand for jute and jute-diversified products is now being driven by environmental initiatives like the banning of polyethylene bags. This has caused prices to rise in recent years (see Figure 51).

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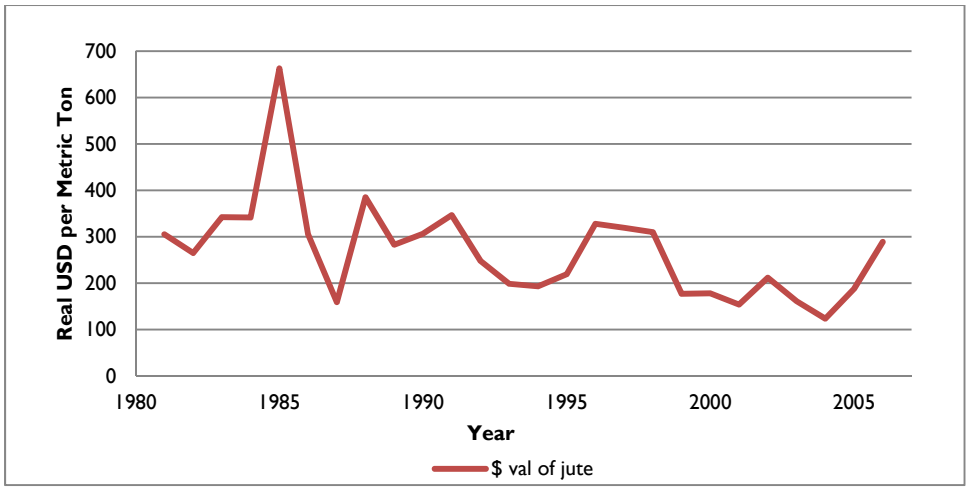
[155] Islam, K. and de Silva, H., "Jute Value Chain in Bangladesh: Information and Knowledge Gaps of Smallholders," December 2011.
[156] Own calculations based on FAO production and import statistics.
[157] Ahmed, N. et al., "Distortions to Agricultural Incentives in Bangladesh," Agricultural Distortions Working Paper 32, World Bank, December 2007.
[158] Own calculations based on data from UN Comtrade. Jute products include HS codes 5303, 5307 and 5310.
[159] HS Codes 5303, 5307 and 5310.
[160] Own calculations based on EPB Export Reports.
[161] DAM does not disclose the exact source of this wholesale price. It appears to be an average calculated from a range of jute qualities and wholesale markets across the country.
[162] Own calculations using Bangladeshi Ministry of Agriculture's Handbook of Agricultural Statistics, Table 9.01, "Harvest Time Whole Sale Market Prices of Selected Crops", USD and BDT exchange rates from the World Bank's World Development Indicators, and the US Wholesale Price Index from the IMF's International Financial Statistics.

Figure 50 – Real Wholesale Market Price of Jute, 1980–2005.



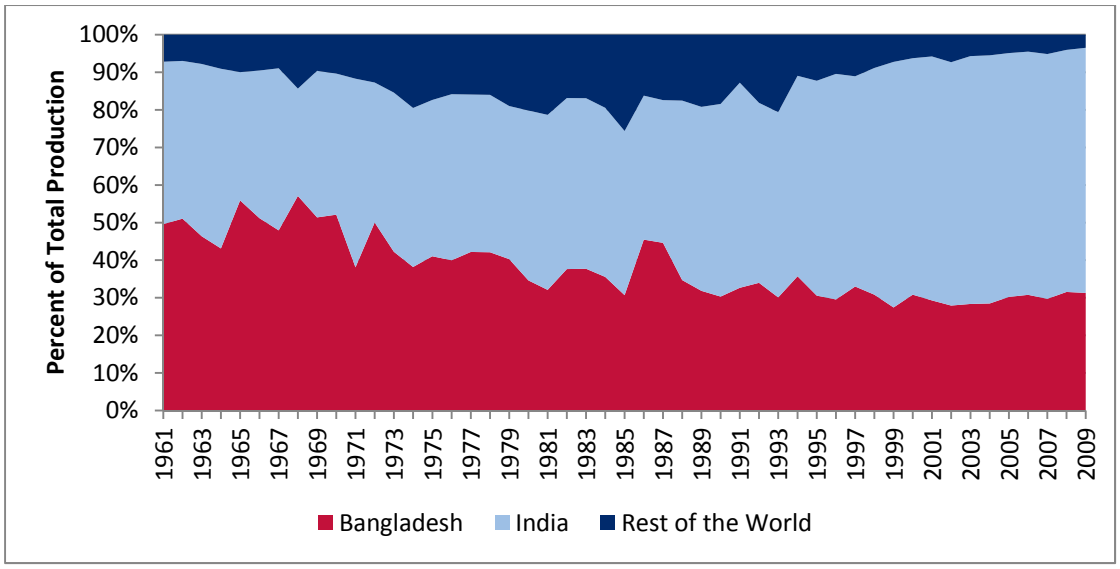
Source: Calculations based on data from Bangladesh Department of Agricultural Marketing (DAM).

Despite the fact that jute accounts for a small portion of export revenues, Bangladesh is the second-largest producer of jute in the world after India. It is also the number one exporter. In 2010–2011, Bangladesh produced 990,000 metric tons (MT) of jute, equivalent to one-third of world supply. India consumes most of its own raw jute fiber. Therefore, Bangladesh accounted for almost 95% of world jute fiber exports. Despite India's dominance in jute production, it is also a major consumer of Bangladeshi jute.

As illustrated in Figure 52, Bangladesh's share of raw jute production has been falling over the last 50 years, while India's share has grown. Overall, the total global trend in jute production has been positive, growing at an average of 13,000 MT per year.[163] However, Bangladesh has seen its production decline slightly, by an average of 10,000 MT per year. This gradual decline has led India to surpass Bangladesh as the primary jute producer.

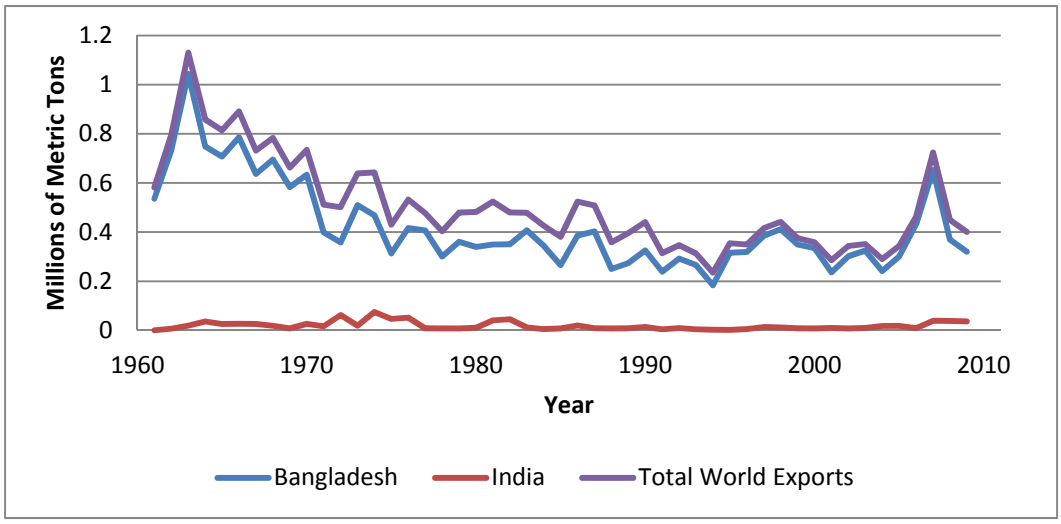
[163] A linear trend line fitted to FAO statistics on jute production from 1961–2009 shows a slope of .0129 MT per year.

Figure 51 – Total Jute Production by Country, 1961–2009.



Source: Food and Agriculture Organization of the UN, Statistics Division (FAOSTAT).

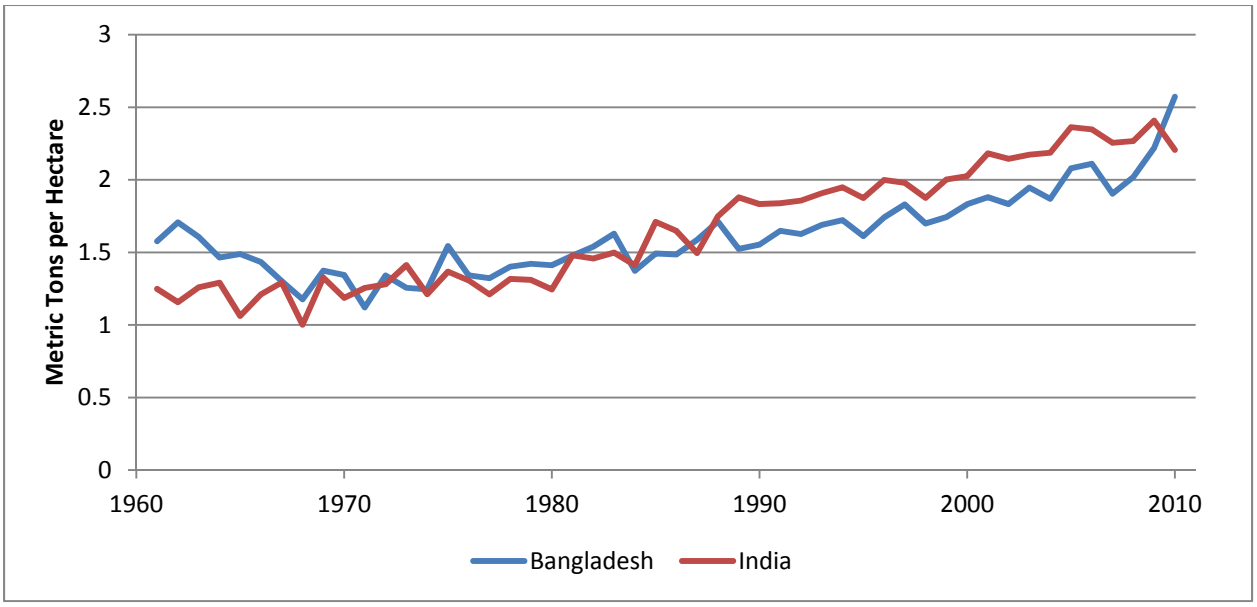
Figure 52 – Jute Exports by Country, 1960–2010.



Source: FAOSTAT.

The divergence in Indian and Bangladeshi production can be at least partially explained by changes in yield. From 1961 until the end of the 1980s, the two countries maintained similar and steadily increasing yields. But beginning in the 1990s, India showed a slightly higher yield even as both countries continued to improve production (see Figure 54). However, some sources indicate that Bangladesh may have closed the gap or even overtaken India in 2010.

Figure 53 – Raw Jute Yields by Country, 1960–2010.



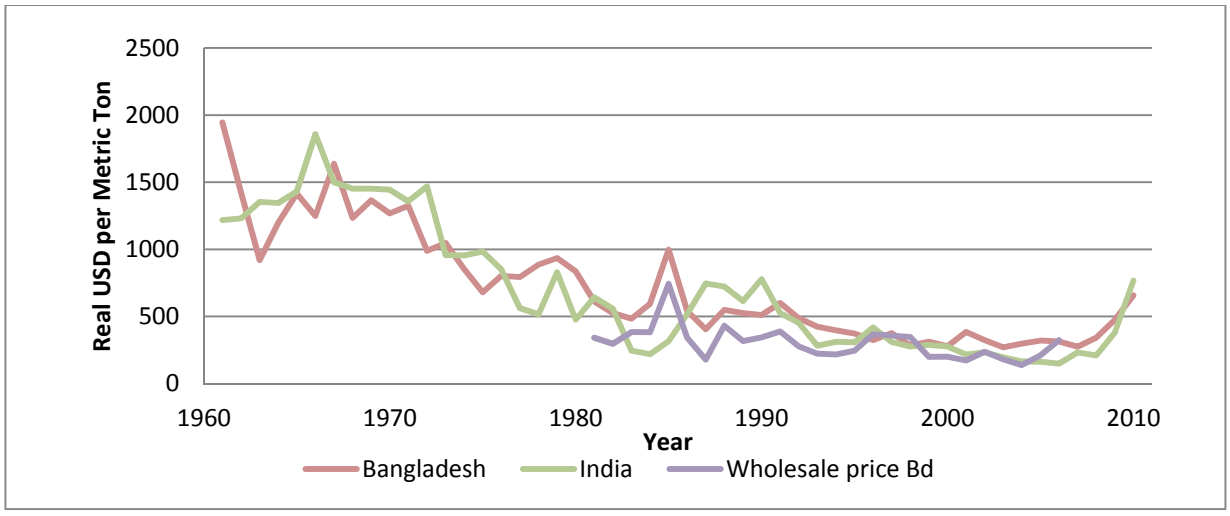
Source: FAOSTAT.

Although Bangladesh produces some of the highest quality jute in the world, average real export prices (based on FAO statistics on total export quantity and export value) are not substantially different from the price paid to Indian exporters. [164] According to time series data for jute wholesale and export prices, the assessment team was only able to find what appeared to be an average of many different grades. It is important to keep in mind that different quality jute can command vastly different prices. The Bangladesh Jute Association Market Report regularly publishes prices for different varieties and grades of jute. For example, the price for the highest quality jute, *Bangladesh Tossa Special*, on September 20, 2012, was BDT 14,300 per bale (USD 956 per MT), while the much lower grade *Bangladesh White E jute* was only worth BDT 10,400 per bale (USD 696 per MT).

In 2010, the export price for Bangladeshi raw jute reached USD 657[165] per MT, a peak for the decade (see Figure 55). However, farmers complained of prices falling to lower levels in 2011 and 2012. Although the data is imperfect, the calculated export price still appears to exceed the wholesale price, suggesting that higher-quality jute is exported for processing elsewhere.

[164] Calculations by the assessment team based on FAO export value data and the US Wholesale Price Index from the IMF's International Financial Statistics.
[165] As calculated from FAO statistics on total export price and volume.

Figure 54 – Export Price by Country, 1960–2010.



Source: Calculations based on data from FAOSTAT and DAM.

Only the higher-value, higher-quality jute can be used to make value-added products such as jute and jute-blend cloth. Bangladesh produces the highest-quality jute, but it exports very few specialty jute products. Of the 3% of total exports of jute and jute-based goods in 2011–2012, 60% was jute yarn, 34% was raw jute fiber and only 6% was jute fabric.[166]

STRENGTHS

About 35 million people, or 25% of the population of Bangladesh, are directly or indirectly employed by the jute sector. Many jute farmers rotate their crops and the jute industry is often a secondary source of income.[167] The majority of people employed in the jute sector are smallholder farmers from the SSW. The sector has long been associated with overall prosperity in Bangladesh, but more importantly with that of its poorest population. It also provides employment for a large number of women. On the farm, women help with sowing and harvesting, as well as with post-harvest soaking and retting. Women also make up a large proportion of mill workers. At the Akij jute mill in Abhaynagar, 60% of the workforce was female.[168]

Farmers choose to grow jute for several reasons. The input costs are relatively low and jute tolerates inclement weather better than other crops. In the off season, farmers can produce additional crops, including rice. After the initial post-harvest processing, the raw jute is easily stored, allowing farmers to choose to sell later when prices may be higher. For all these reasons, jute is considered a low-risk crop, making it particularly popular with poor, smallholder farmers.[169]

The growing interest in environmentally friendly and sustainable products has led to new demand for jute products. Currently, 23 countries worldwide have implemented policies to reduce the use of plastic bags, ranging from city-specific taxes to national bans.[170] Jute shopping bags are an obvious substitute as

[166] Own calculations from EPB Export Reports. Jute fiber is HS code 5303, yarn is HS5307 and fabric is HS5310.
[167] Rahman, M., "Policy & Prospect of Jute & Allied Fibers with Special Reference to Bangladesh."
[168] Interview at Akij jute mill, Abhaynagar.
[169] Islam, K. and de Silva, H., "Jute Value Chain in Bangladesh: Information and Knowledge Gaps of Smallholders," December 2011.
[170] http://plasticbags.planetark.org/gov/othercountries.cfm

they are biodegradable and more durable.[171] Additionally, products such as onions keep better when packaged in breathable jute bags than in synthetics.

The jute industry in Bangladesh also benefits from a substantial network of public and private organizations and associations dedicated to the jute industry, including:

- The Department of Jute, Ministry of Textiles and Jute
- The Bangladesh Jute Mills Corporation
- The Jute Diversification Promotion Centre
- The Bangladesh Jute Research Institute
- The Bangladesh Jute Spinners Association
- The Bangladesh Jute Mills Association
- The Bangladesh Jute Goods Association
- The International Jute Study Group

Field interviews led the assessment team to understand that several of these organizations are regarded as ineffective. For example, the Bangladesh Jute Mills Corporation (BJMC) is known for running inefficient operations and the Jute Diversification Promotion Centre is virtually unknown. However, the existing institutional framework is an industry asset. Other institutions, such as the Jute Research Institute, are highly regarded.

In 2002, the government of Bangladesh (GOB) designed a National Jute Policy, revised in 2007, aimed at promoting the production and exports of jute and jute-based products. It focused on developing higher-quality and higher-yield seeds. The GOB also supports the jute industry by providing a 10% cash incentive to exporters (based on export value), as well as by purchasing a substantial amount of jute to supply state-owned mills. [172] Between 2010 and 2012, the GOB subsidized the industry by distributing 30,000 free ribbon-retting machines to poor farmers.

WEAKNESSES

While jute cultivation is relatively uncomplicated, and thus favored by poor smallholder farmers, two critical elements impact on the quality of the final product: seed and retting. Currently, the supply of high-yield jute seeds is well below demand. Although the GOB has put considerable resources into developing improved seed, it is only able to supply 10–15% of the market.[173] Thus, the majority of jute growers end up importing high-yield seed from India. However, these high-yield seeds produce a lower-quality jute fiber, causing farmers to trade quality for quantity.[174]

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[171] "A Roadmap for Jute," International Trade Center (ITC), April 2006.
[172] Jute export incentives were first introduced in 1994. During the 2009-2010 fiscal year the subsidy was increased from 7.5% to 10%. Gupta, P. et al. "Close Eye or Closed Eye: The Case of Export Misinvoicing in Bangladesh," International Food Policy Research Institute Discussion Paper 01157, January 2012.
[173] Islam, K. and de Silva, H., "Jute Value Chain in Bangladesh: Information and Knowledge Gaps of Smallholders," December 2011.
[174] "A Roadmap for Jute," ITC, April 2006.

Another critical determinant of jute-fiber quality is the retting process. Not all farmers have the knowledge or means to ret their jute properly. As a result, it is often left to soak in saline or muddy water, significantly reducing the quality of the final product. Climate change is compounding the issue as salinity levels increase and as water sources and rainfall become less reliable. Additionally, farmers have been reluctant to adopt the new ribbon-retting process, which requires less water. In 2010, the Department of Agricultural Extension distributed 1,500 ribbon-retting machines. But even in dry years such as 2012, farmers resisted using them, arguing that the machines were not suitable for large quantities of jute and that they were too expensive to operate.[175]

Another critical issue is the inefficiency of many of the mills. The public mills often operate at 50% capacity and many of the private mills operate at only 20%.[176] Additionally, much of the machinery is obsolete.[177] Both issues are partly due to the legacy of mismanagement and debt overhang from the 1970s, when mills were first nationalized. Saddled with debt, many are unable to invest in newer, more efficient equipment.

Currently, the majority of jute produced in Bangladesh is transformed into low value-added yarns for export or it is exported as raw fiber. Although the GOB established the Jute Diversification Promotion Center in 2002, it has not been successful in promoting higher value-added products, upgrading equipment or improving knowledge and training. For the few mills that have made progress in manufacturing value-added products, there is minimal support and market knowledge.

CHALLENGES

The greatest challenge to expanding the jute industry in Bangladesh is government policy. Although the GOB invests considerable time and money in developing new seed technology and disseminating information and equipment, including a program encouraging farmers to grow their own high yielding variety (HYV) seed[178], it has been unsuccessful in increasing the supply of high-quality seeds. Government investment in R&D and extension services is helpful. But the current system of government seed production and distribution leads to a chronic undersupply. Similarly, the nationalization of jute mills has led to poor mill management, reduced product quality and underutilization. Further research is needed to determine the distortions and potential remedies to these issues. The Common Fund for Commodities (CFC) has researched the regional jute seed market and has proposed to develop private sector production and distribution of HYV jute seeds.[179]

The variety of jute grades produced also presents a challenge, but it is a major opportunity for Bangladesh. Currently, smallholder farmers do not receive adequate information on the full range of jute grades and their respective prices. When traders buy jute from farmers, they purchase unsorted jute containing a variety of grades at an average price. Even if a small level of sorting is done in the initial transaction, it is only done in terms of aggregate grade levels such as 'low' or 'high' quality. As a result, farmers obtain a lower price for their product. Without knowing exactly what grade of jute is being produced and sold, they are unable to command appropriate prices.

The market dominance of synthetics and the competition from India in added-value jute products also pose a challenge to Bangladesh. Even as prices for synthetics rise, plastic bags are expected to remain

[175] "Jute Retting Faces Problem for Want of Adequate Water in Bangladesh," *The Daily Star*, Bangladesh, August 24, 2012.
[176] Study on Intraregional Trade and Investment in South Asia, Asian Development Bank (ADB), November 2009.
[177] Interview with Creation Private Ltd., September 13, 2012
[178] The Integrated HYV Jute and Jute Seed Production project began in 2002 using 10,000 listed farmers.
[179]CFC Development of Jute Seed Entrepreneurship through Regional Cooperation. http://www.common-fund.org/fileadmin/user_upload/Publications/CC/CC50/4_a_IJSG_27_Proj_Doc.pdf

cheaper than jute bags (USD 0.25–USD 0.35 versus USD 0.45–USD 0.55). [180] Even with greater durability and lower environmental impact, it may still be difficult to convince consumers and manufacturers to switch back to using jute for bags and packaging, or as a manufacturing input.

India has continued to invest in its jute industry by providing a 60% grant for new technology. This has allowed Indian farmers to diversify into higher value-added products such as shopping bags, cloth and clothing and anti-erosion geotextiles.[181] Meanwhile, Bangladesh continues to focus on producing low value-added products and supplying India with raw jute. In 2011–2012, India was the number one importer of raw jute fiber from Bangladesh (26% of fiber exports)[182]. For Bangladesh to build its value-added jute manufacturing industry, it will need to outperform established Indian manufacturers and invest in machinery.

OPPORTUNITIES

For jute farmers, the combination of research in higher-quality seeds and improved retting processes, combined with improved farmer knowledge, has the potential to increase the yield and improve the quality of jute fiber. If previous government investments in these areas can be combined with additional extension services and training in jute grading and pricing, smallholder farmers could increase their incomes and processors would have access to inputs that would favor higher value-added production.

The growing demand for environmentally friendly products, as well as the high prices for petroleum-based synthetics, presents an opportunity to revive Bangladesh's jute mills. However, the GOB must make good on promises to develop diversified jute products and promote exports. If the jute mills make new investments in machinery and technology, they can take advantage of locally produced high-quality fiber. This would establish Bangladesh as the premier source of diversified jute products. By one estimate, diversifying just 25% of exports into higher value-added products would generate an additional USD 1 billion in export revenue.[183] Neighboring India and Pakistan represent some of the largest markets for Bangladeshi jute exports. However, both practice tariff escalation. This makes it cheap to import raw jute from Bangladesh, but much more expensive to import higher value jute-diversified products.

Further research is needed into the constraints at the underutilized jute mills operated by the BJMC. Some mills could be retrofitted to produce higher value-added products. Others could be closed, thus freeing government funds to support extension services for farmers. Bangladeshi jute mills should consider working with well-established Indian mills, taking advantage of Indian market knowledge and encouraging Indian investors who already source their raw jute from Bangladesh to open mills locally. Currently, the state-run BJMC mills perform significantly worse than privately run mills. BJMC mills are less profitable, they operate with poorer equipment, have less qualified management and are overstaffed.[184] Indian firms could help improve the operational and financial management at mills and provide instruction on the development and marketing of jute-diversified products.

Privatization of some of BJMC's mills might not generate funds for improvements elsewhere in the value chain. Indeed, it may require funds to write off or reschedule BJMC debts. However, transferring

[180] "A Roadmap for Jute," ITC.
[181] Interview with Creation Private Ltd., September 13, 2012.
[182] Own calculations based on EPB Export Reports.
[183] Interview with Creation Private Ltd., September 13, 2012.
[184] Moazzem, K. et al. "Jute Manufacturing Sector of Bangladesh: Challenges, Opportunities and Policy Options," Center for Policy Dialogue (CPD), Occasional Paper, Series 78, January 2009.

ownership to the private sector would ultimately result in more efficient and innovative operations at the mills.

CONCLUSION

The jute industry in Bangladesh has considerable opportunities for growth at both the farm and mill level. But it must address the following core issues:

- Liberalization and increased private-sector ownership of the market for jute seeds
- Improved farmer knowledge, specifically:
    - seed quality and yield
    - traditional versus ribbon-retting process
    - the grading and pricing of jute fiber
- Debt overhang at both public and private jute mills
- Obsolete jute mill technology
- Development of value-added, jute-diversified products
- Improved branding and connections to international markets

Significant efforts need to be made to change the government's role in the jute industry. The GOB should help develop a private-sector market for high-quality seeds much like the program proposed by the CFC. It should also expand extension services focusing on seeds, retting and grading. Currently, agricultural extension services are insufficient and jute farmers receive little support.[185]

The debt overhang inherited when the mills were re-privatized in the 1980s and 1990s needs to be restructured. This will allow the mills to reinvest in technology. With improved production of quality jute and new technology, the mills will then be able to focus on higher value-added products that appeal to export markets. Bangladesh could also leverage its position in the RMG industry to expand into jute and jute blend fabrics for garments and house wares.

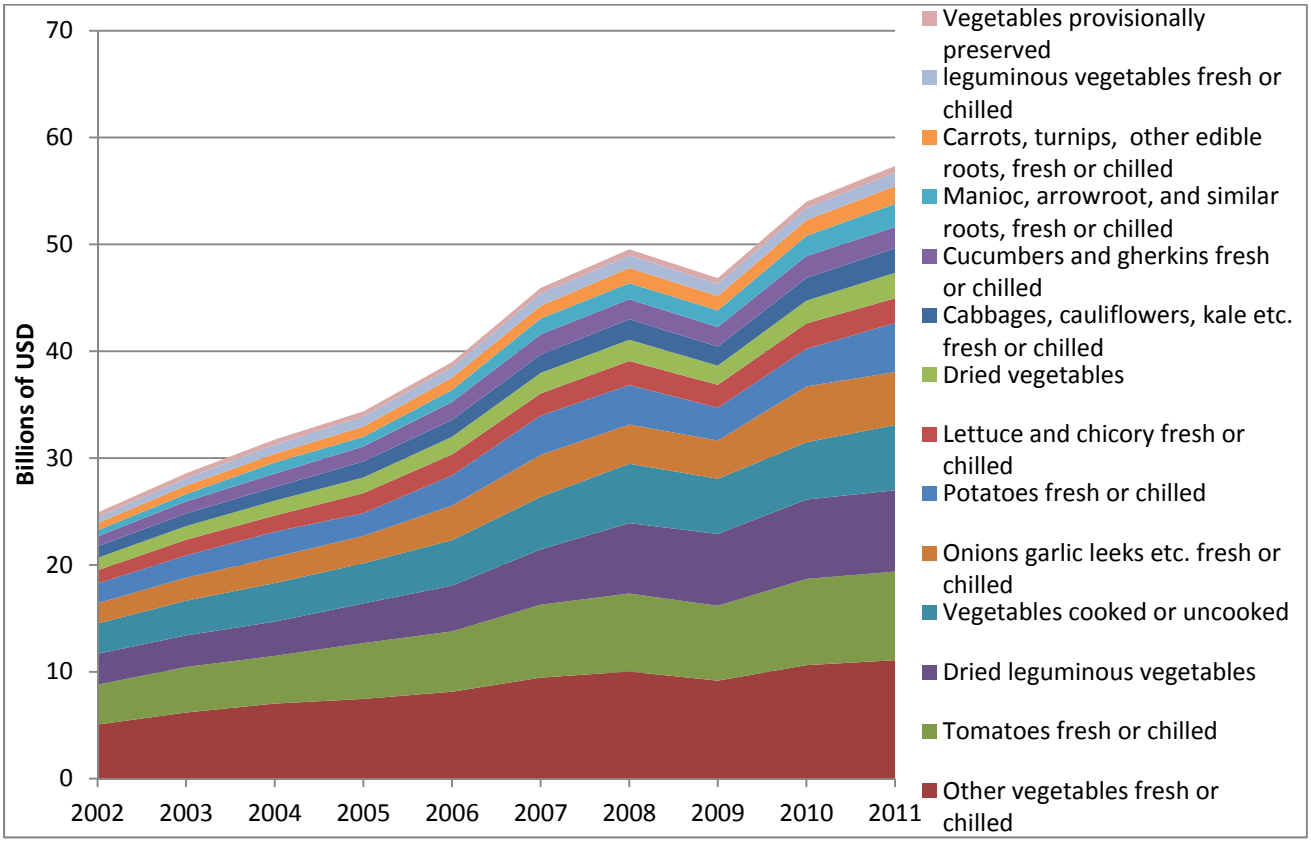
[185] Interview with Creation Private Limited, September 13, 2012.

ANNEX 4: VEGETABLES

GROWTH OPPORTUNITIES

World import demand for vegetables has grown steadily in the last decade at an annualized rate of almost 10%.[186] The greatest demand for specific vegetables was for tomatoes, legumes, potatoes and onions. The largest global importers of vegetables are typically wealthier nations, including the United States (13% of imports 2002–2011), Germany (12%), UK (9%) and France (6%).[187] However, the fastest growth in import demand has been from emerging markets like Russia (32% annualized growth), China (28%) and Indonesia (23%).[188]

Figure 55 – World Import Demand by Product, 2002–2011.



Source: UN Comtrade

Although the UK is also a major importer of Bangladeshi vegetables, Bangladesh has little presence in other major overseas markets. In fact, imports of Bangladeshi vegetables appear to be driven primarily by the presence of large Bangladeshi expatriate communities. The majority of import demand for

[186] UN Comtrade.
[187] Ibid.
[188] Ibid.

Bangladesh vegetables comes from the Middle East and Asia, including the United Arab Emirates (UAE), Kuwait, Malaysia, Qatar and Saudi Arabia, in addition to Italy and Canada.[189]

Although Bangladesh has had success supplying these niche overseas markets, its overall export market share has consistently remained well below 1%.[190] In recent years, the country has also lost the comparative advantage it held in vegetable exports between 2004 and 2007. Potatoes are the single product for which it retains a comparative advantage.[191] In fact, potato exports grew at an annualized rate of over 80% between 2002 and 2011.[192] In order to expand market share and move beyond serving the Bangladeshi diaspora communities, vegetable producers must strive to improve the quantity and quality of their products.

PRODUCTION AND EXPORTS

Horticulture accounts for 13 million metric tons (MT) of the 70 million tons of agricultural output in Bangladesh.[193] According to the Food and Agriculture Organization of the United Nations (FAO) vegetables accounted for 3.7 million MT of production from 488,924 hectares nationally in 2010.[194] Some of the major vegetable crops include eggplant, okra, radish, potatoes, brinjal, bottle gourd, bitter gourd, cauliflower, cabbage, aroids, tomatoes, beans and leafy vegetables.

Bangladesh exports fresh and processed vegetables, mainly to markets in the Middle East and Europe, as well as to South Asia. A number of processing companies have emerged in the last ten years, including Pran and Golden Harvest. They export canned, packaged and frozen fruits and vegetables, as well as juices and other beverages. Although the export market is important for these producers, one company told the assessment team that they are considering discontinuing their exports to focus instead on the 30–40 million consumers of Bangladesh's middle class. The company stated that middle-class consumers are willing to pay for frozen foods, thus creating a situation in which profits from the domestic market are higher than those from export markets. Coupled with the challenges facing exporters, this is making the company reconsider its strategy.

Exports of agricultural products from Bangladesh exceeded 80% of the country's total exports in 1973, just two years after independence. But few of these exports were horticultural in nature. Over the years, horticultural production and exports have increased gradually (see Table 7 for more recent statistics of winter and summer vegetables), with data showing growth accelerating, except for 2008.

Because vegetable exports are a niche market in Bangladesh, the data on exports is unreliable. UN Comtrade data, which is only available through 2007, showed a 38% annualized growth in the value of vegetable exports from 2002 to 2007. From 2008–2011, mirror data reported by the ITC, and based on Comtrade data, shows much lower levels of exports. However, EPB data for 2008–2011 suggest exports remained at the higher 2007 levels, only stalling briefly in 2008 and then continuing to grow. According to the EPB, Bangladeshi producers are currently exporting over 100 MT per day (see Table 8), of which approximately 15 MT per day are being shipped via air cargo, primarily to the Middle East. The rest is largely transported by truck to India. Most exports to the Middle East are shipped in the cargo hold of Qatar Airways, Etihad or Emirates.

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[189] UN Comtrade.
[190] ITC Trade Map 2002–2011.
[191] ITC Trade Map data. RCA calculations for 2008–2011 are based on imperfect mirror data and may be underestimating Bangladesh exports.
[192] ITC Trade Map data.
[193] "Integrated Farming Systems Development Programme 2013–2017 in Bangladesh," DANIDA International Development Corporation and Harewelle International Limited, September 2011.
[194] FAO Stat figures for Vegetables, Primary, 2010.

Table 7 – Annual Production of Selected Winter and Summer Vegetables, 2006–2007 to 2008–2009.

Crops	2006–2007			2007–2008			2008–2009		
	Area Hectares	Yield (Kg/Ha)	Production MT	Area Hectares	Yield (Kg/Ha)	Production M.T	Area Hectares	Yield (Kg/Ha)	Production MT
VEGETABLES (Winter)									
Brinjal	28,816	7,905	222,110	29,345	7,337	215,282			
Pumpkin	12,430	8,355	103,840	13,055	8,211	107,214			
Cauliflower	14,814	9,667	143,200	15,838	9,879	156,483			
Cabbage	15,281	11,955	182,685	16,225	13,010	211,097			
Water Gourd	12,914	9,069	117,120	13,363	8,683	125,949			
Tomato	19,409	7,055	136,935	19,643	7,282	143,058			
Radish	25,327	9,311	235,815	27,542	9,696	267,048			
Beans	15,449	5,372	82,980	15,588	5,315	82,872			
Carrot	1,111	8,871	9,855	1,153	9,044	10,430			
Palon Sak	7,436	5,127	38,205	7,793	5,649	44,030			
Lal Sak	9,211	4,062	37,415	10,009	4,114	41,189			
Lausak	5,528	3,699	20,445	5,647	3,966	22,403			
Others.	7,825	4,230	33,095	7,617	4,450	33,906			
Total Winter Vegts.	175,549	94,678	1,363,700	182,820	96,638	1,460,961			
VEGETABLES (Summer)									
Kakrol	3,699	4,707	17,415	4,290	5,155	22,121	10,620	4,298	5,350
Pumpkin	9,615	8,070	77,595	10,555	7,818	82,520	27,505	11,131	8,313
Brinjal	17,812	6,227	110,910	18,380	6,677	122,730			
Patol	9,514	7,191	68,415	9,732	7,230	70,367	24,558	9,938	7,292
Lady's Finger	9,381	4,127	38,715	9,782	3,936	38,508			
Jhinga	8,492	4,310	36,595	9,041	4,534	40,995	22,780	9,219	4,515
Karala	7,946	4,334	34,445	8,596	4,613	39,648	21,688	8,777	4,571
Green Banana	13,189	24,384	321,585	13,726	21,936	301,065	30,319	12,270	17,836
Arum	19,765	7,930	156,725	21,273	8,456	179,866			
Chalkumra	6,572	6,753	44,385	7,833	6,724	52,666	21,077	8,530	6,719
Cucumber	6,778	4,791	32,480	7,256	5,063	36,740			
Khirai	3,460	7,322	35,665	4,055	7,312	29,646			
Puisak	7,732	6,751	62,195	8,610	6,427	55,339	21,937	8,878	7,097
Chichinga	5,453	4,480	24,430	5,850	4,604	26,934	15,193	6,148	4,752
Danta	9,085	6,242	56,715	10,090	6,094	61,475			
Total Summer Vegt.	138,494	107,619	1,118,270	149,065	106,579	1,160,620	195,677	79,188	66,444

Source: Bangladesh Bureau of Statistics.

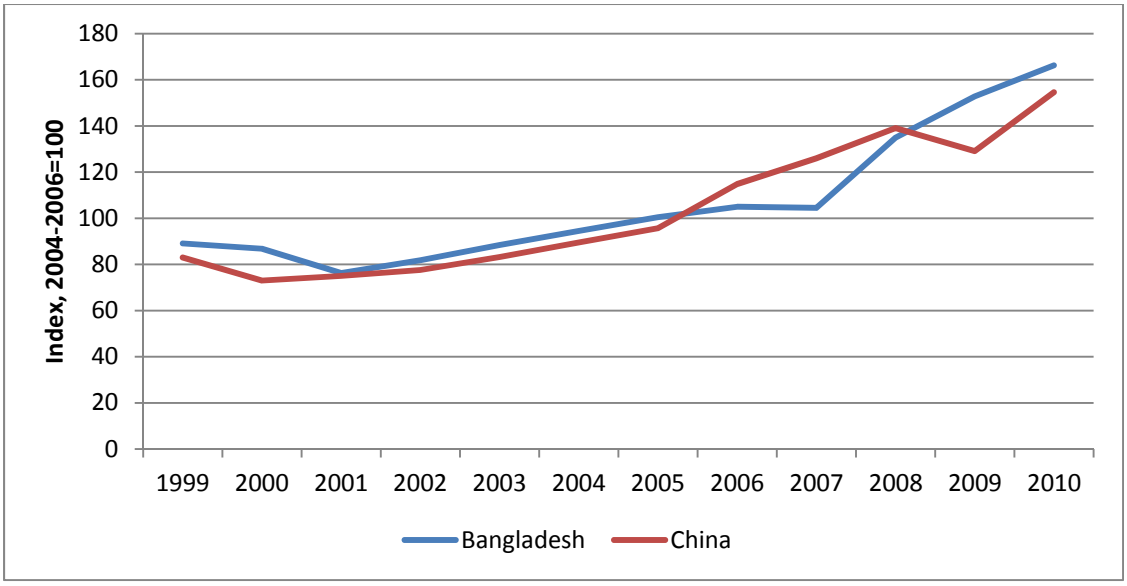
Table 8 – Export Performance of Fresh Vegetables from Bangladesh, 2005–2011.

Fiscal Year[195]	Quantity Exported (MT)	Growth %	Export Value (Mill. USD)	Growth %
2005–06	17,218		32.92	
2006–07	18,276	+6.15	35.64	+8.26
2007–08	30,930	+69.24	60.47	+69.67
2008–09	22,790	-26.32	44.67	-26.13
2009–10	23959	+5.12	46.84	+4.86
2010–11	36,672	+53.06	71.73	+53.14

Source: Bangladesh Export Promotion Bureau.

[195] The Bangladeshi fiscal year runs from 1 July–30 June.

Figure 56 – Vegetable Producer Price Indices, 1999–2010.



Source: FAO Stat.

Although vegetables face considerable obstacles to expand exports into some of the larger foreign markets, price data suggests that Bangladesh could be a competitive supplier. China currently leads the world in vegetable exports. In a comparison of FAO producer price indices, Bangladesh tracks Chinese prices quite closely. If Bangladesh is able to build on its current success in niche market vegetable exports, it could also take advantage of growth in global vegetable demand.

STRENGTHS

Bangladesh has a long growing season and a climate and soil suitable for cultivating a number of horticultural crops. More than 90 types of vegetables, 60 fruits and 25 spices are commercially produced domestically, many of them exported fresh or processed (canned or flash frozen). Intercropping of horticultural crops has proven a success, particularly near shrimp and fish farms in the southern part of the country. This offers an innovative model for expanding the areas dedicated to seasonal crops.

Due to the lack of standardization and difficulties in targeting new markets, vegetable exports from Bangladesh are mostly limited to ethnic markets with little scope to become major players. However, this will allow exporters to target high-growth regional markets such as India, Myanmar, Malaysia, Thailand and others. One major Bangladeshi exporter is considering cutting exports dramatically, while expanding his regional and domestic market base.

Meanwhile, there is growing demand for premium fresh vegetables internationally, as well as within the region. With a large private farming population that can produce two to three harvests per year, Bangladesh has an opportunity to expand beyond the 25 countries it exports to every year. Bangladeshi growers and producers have so far succeeded in gaining access to niche ethnic markets in select countries. With the proliferation of new supermarkets globally, many new food product niches have become available, such as hand-picked fresh vegetables and certified organic produce.

At the same time, a number of development projects are working to improve the high-value agricultural sector, with results beginning to show for companies in terms of new markets, sales and employment.[196]

WEAKNESSES

High-value agriculture suffers from a series of weaknesses that constrain growth potential in the sector. Some of the factors limiting value chain growth include physical and financial infrastructure, international testing, poor market information and fragmented landholdings.

The limited investment in supply-chain infrastructure results in high post-harvest losses, low productivity and poor quality. Post-harvest losses are commonly 35–40%, with some processors reporting that they regularly have losses as high as 50%. This is caused by the lack of on-farm cooling, drying and processing facilities, inadequate storage and a cold chain that is almost nonexistent[197]. Facilities at markets are poor, as are the transportation options, which include motorized and non-motorized rickshaws and trucks. In field meetings, the lack of a cold chain was considered one of the key weaknesses in delivering high-quality fruits and vegetables.

Fragmented holdings make up the majority of cultivated land in Bangladesh. Most farmland is held by smallholders working parcels of 0.25–1.00 hectares (1.2–2.4 acres). Many smallholder farmers produce food for their families, but they also sell the surplus at the market. However, these surplus foods often cannot be exported because of poor quality, excessive chemical residues and inadequate post-harvest techniques. Also, a high percentage of smallholders lease their land, usually for one to three years. This creates a situation similar to the one experienced by shrimp and fish farmers, in which the farmer has little incentive to invest in the land and, as a leaseholder, cannot gain access to formal credit. Additionally, small farms lack the economies of scale required to enter new markets and control access to end markets.

Horticultural goods in Bangladesh are typically moved around in poor conditions by a large number of intermediaries. These can include collectors, aggregators, transporters, wholesalers, processors and retailers. At any point along this chain of distribution, goods are vulnerable to damage due to improper or excessive handling.

At the border with India, trucks are required to off-load onto Indian trucks for the journey to the final destination. One leading Bangladeshi processor noted there are times when his goods are handled four times before they reach their final market across the border. This extra handling causes additional waste. Coupled with the lack of cold-storage facilities, long delays at the border and poor roads, the excessive handling creates losses that exceed the total cost of transporting the goods from a factory to the final destination in India. The following is a common transportation scenario for shipping boxed juice to market in India:

1. Goods are loaded onto a truck at the factory in Bangladesh and driven to the border.

2. At the border, the goods are unloaded and then reloaded onto an Indian registered truck[198].

[196] High Value Agriculture products generate high returns per unit of labor, land or capital. These include most fruits and vegetables, as well as dairy and eggs, meat and fish. For example, USAID's PRICE project helped Golden Harvest develop new systems for sourcing raw material, as well as helping them to introduce tracing systems in their supply chain.
[197] IFC research found 74 cold-storage units unevenly distributed across Bangladesh, with 27 in the southwest, including 10 in Jessore and 5 in Khulna. However, almost all this capacity serves to store potatoes.
[198] This is due to the requirement that Bangladeshi-registered trucks are generally not allowed on the roads in India.

3. This truck drives the goods into the Customs zone on the Indian side where they are unloaded into a bonded warehouse. They remain there until testing confirms that the goods are safe for consumption in India.

4. Once cleared from the warehouse, the goods are reloaded onto a truck for delivery to the destination in India.

In meetings with industry, government and donors, the assessment team learned there was near unanimous agreement on the lack of access to affordable credit across the entire value chain, especially at the farmer level. Lack of access to formal credit by farmers forces them to rely on loans from input suppliers and informal sources, often at predatory rates. This also forces farmers to enter into an asymmetric relationship with input suppliers, leading to situations in which they become, in effect, indebted share-croppers. This creates a cycle of debt from which it is difficult to escape.

Not having access to real-time wholesale market pricing information has been another ongoing constraint. It is also a key reason for the low returns obtained by farmers on goods entering the market.

Food safety issues have also affected the quality and marketability of vegetables from Bangladesh. According to a World Bank study from 2005, 47% of farmers sampled made excessive use of pesticides.[199] In a 2012 report, Saudi Arabia threatened to impose a permanent ban on imports of fresh vegetables, fruit, flowers and seafood from Bangladesh after finding harmful residues in a shipment of betel leaf.[200] In addition, food-borne illnesses in Bangladesh have increased, many of which can be traced to the mishandling of horticulture products washed in contaminated water, stored on the ground or in unclean containers, or handled in unhygienic ways. The Plant Protection Wing at the Ministry of Agriculture provides quarantine monitoring of imported and exported plants and vegetables. It also monitors residue from agricultural pesticides and fertilizers. However, limited human resources and inadequate equipment limit the efficiency of this facility.

There are no accredited laboratories in Bangladesh that can effectively test food products destined for domestic or international consumption. As a result, products are often held at the border until labs in other countries can carry out tests and release the results, thereby adding another constraint to competitiveness. The untrained manpower and archaic equipment pose additional barriers to setting up accredited laboratories.

CHALLENGES

As with aquaculture, a key challenge will be to bring smallholder farmers into the market mainstream while scaling up production and quality. Many of these small farmers are trapped in a vicious circle of debt. This indebtedness makes it impossible for individual farmers to increase their cultivated areas. Only by consolidating land holdings can the vegetable sector achieve high-intensity production.

International buyers are interested in buying larger volumes. But Bangladeshi farmers and exporters cannot meet their volume, quality and delivery requirements. Relying on domestic producers, exporters can teach, train, request, grade and package the produce. However, they lack control over each farm's consistency, quality and quantity. Aggregating large volumes of export-quality fresh vegetables requires significant management and capital, both of which are lacking in Bangladesh.

[199] Dasgupta, S., et. al., "Health Effects and Pesticide Perception as Determinants of Pesticide Use: Evidence from Bangladesh," The World Bank, 2005 http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2005/11/18/000016406_20051118150008/Rendered/PDF/wps3776.pdf

[200] "Saudi Arabia threatens import ban as BD veg, fruits contain residues," *The Financial Express*, October 15, 2012.

Reducing post-harvest losses to levels below 35–50% will require a change in behavior and the introduction of systems and facilities that support a broader, post-harvest approach. A cold chain that can be shared by agriculture, horticulture and dairy products has not been developed in Bangladesh. However, there is a more urgent need for a cold chain that begins at the farm and extends to airports and seaports. One challenge to cold chains is the existence of 100% duties on imported refrigerated trucks.

OPPORTUNITIES

There are significant opportunities to develop horticulture in Bangladesh. The traditional way of farming and processing needs to adopt more commercial strategies to achieve scale. This will create employment, which in turn will increase prosperity. Specific opportunities exist by focusing on regional and domestic trade, increasing landholdings, improving packaging and testing, and investing in logistics.

The lack of physical infrastructure constrains exports of fruits and vegetables through formal distribution links to European and Middle Eastern markets. It is now clear that regional markets offer better opportunities for high returns than air shipments to distant export markets. There is also a strong will to facilitate trade along the Indian-Bangladesh border. However, an assessment team member who visited the region in 2004 found many of the same problems still present in 2012. This suggests an opportunity for a full-scale trade facilitation project aimed at enhancing the flow of goods across the border to India. The project would demonstrate the benefits of unfettered trade between both countries.

The lack of accredited laboratories in Bangladesh creates a logistical problem for testing and certification of import and export products. The Bangladesh Standards and Testing Institution (BSTI) and other government and private labs should attempt to address this issue with available resources. SGS and other international testing firms are already present in Bangladesh, but they do not yet have a full range of testing facilities. This presents an opportunity to develop a PPP with SGS and other international firms to establish accredited labs.

Consolidating landholdings is a way to aspire to the type of high-intensity production that cannot take place under the current land tenure system. By addressing this challenge, farmers could grow more produce and deliver quantities that could bring significantly more goods to market. Therefore, there is an opportunity to develop a major land consolidation and reform project for SSW Bangladesh.

Intermediaries have a poor reputation for extracting profit from the supply chain while adding very little value. By some accounts, middlemen in the horticulture and aquaculture sectors obtain as much as 20–50% of the total value of a product. Still, some intermediaries have been in business for 30 years and know the markets as well as any industry player. Opportunities therefore exist to foster competitive innovation that incentivizes participation by truly value-adding intermediaries.

The value that intermediaries could add includes providing logistics solutions, such as setting up packing plants and participating in traceability programs. Currently, there are few packing plants in Bangladesh and the ones in place are not fully integrated. This is where another PPP could provide the impetus for further development and expansion. These new value-adding commercial functions would then generate new links in the market chain and thus out-compete old value-subtracting links.

CONCLUSIONS

Many of the challenges facing the horticulture sector lie beyond the control of industry actors. Unreliable infrastructure, a limited cold chain and a dysfunctional air transportation system make for a sector that on the surface may seem to have limited prospects. However, the sector has been able to survive and even thrive. Exports of fresh fruits and vegetables have more than doubled in value since 2004–2005, even though total production levels have not increased as dramatically.

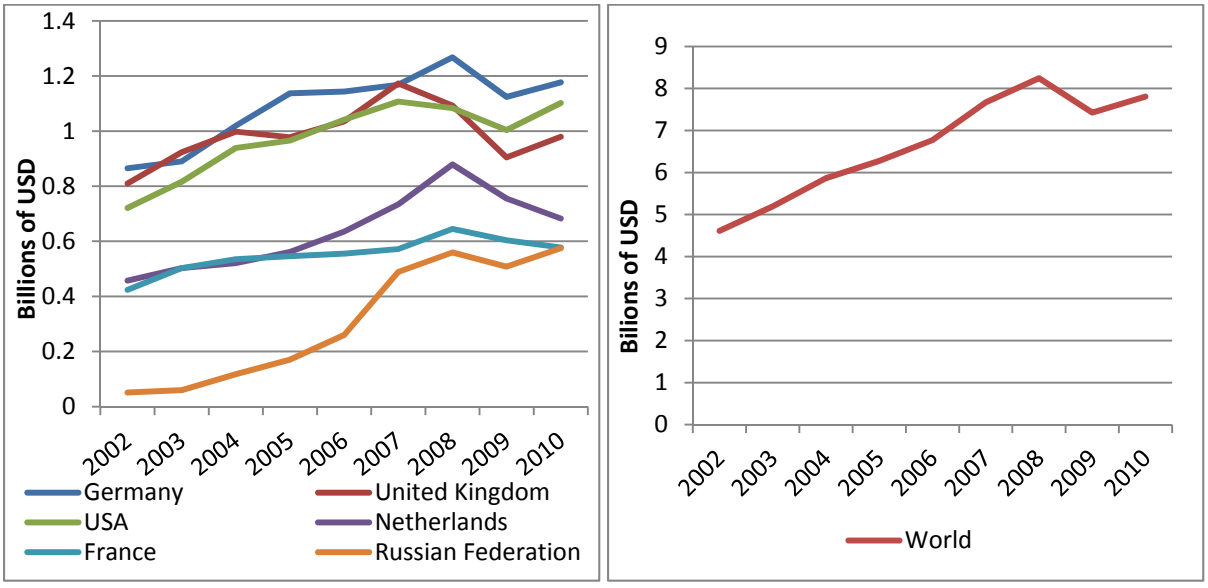
The assessment team feels that with the right kind of targeted industry and policy support, horticulture could continue developing into an important player in the regional and perhaps global market. Land reform, trade facilitation along the Indian-Bangladeshi border, the development of cold chains and enhancements to the air cargo system are just some of the areas that need to be addressed by the industry and its stakeholders.

ANNEX 5: CUT FLOWERS

GROWTH OPPORTUNITIES

Global import demand for flowers has grown steadily in the last decade, at an annualized rate of 7% per year. It reached a peak of over USD 8 billion in 2008, before the onset of the financial crisis. While the global recession dampened the demand for flowers in 2009, imports appeared to be back on track to exceed the 2008 peak in 2011. The noticeable impact of the financial crisis is not surprising, since the largest markets for flower imports are in Western Europe and the United States.

Figures 57 and 58 – Global Import Demand for Cut Flowers, 2002–2009.



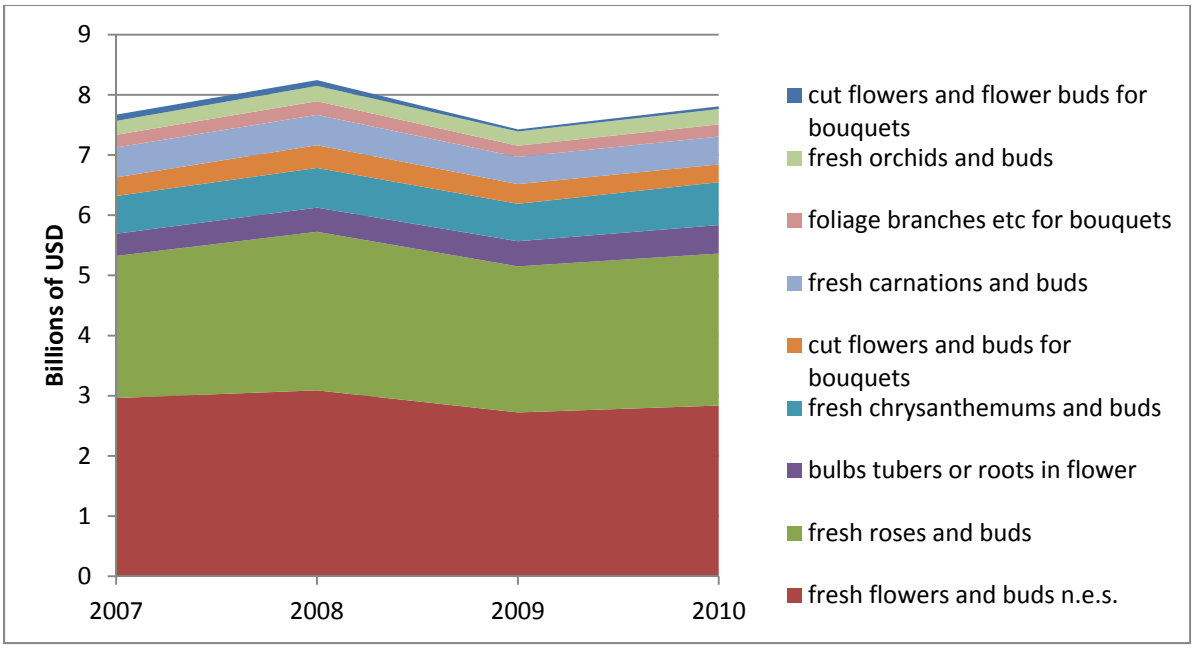
Source: UN comtrade

Europe has traditionally been a center of flower trading and has a large flower cultivation industry to serve local markets. Fresh flowers are a luxury, so growers and exporters have traditionally catered to wealthier countries. In recent years, the economic growth of Eastern Europe has opened new markets for flower exports. Between 2002 and 2008, Russian import demand for flowers grew at an annualized rate of 49% per year. Other fast expanding markets included Kazakhstan (66%), Ukraine (51%) and China (46%).

An HS Code reclassification in 2007 provided more detail into the different types of flowers being imported. Globally, roses are by far the most popular single flower, followed by chrysanthemums and carnations (see Figure 60). However, the largest single product exported from Bangladesh is foliage and branches for bouquets.[201] Between 2005 and 2007, Bangladesh accounted for approximately 15% of the world's bouquet foliage exports.[202] Overall, Bangladesh is still a very minor player in the global market for flowers, with flower exports accounting for less than 1% of total world exports.

[201] UN Comtrade.
[202] ITC Trade Map data.

Figure 59 – Global Import Demand by Flower Type, 2007–2010.



Source: UN Comtrade.

Although data is sparse, it appears that Bangladesh's flower industry is growing. However, it is still a small niche market and the limitations to packaging and storage prevent it from competing in the largest and most demanding markets. While most of the largest flower importers are in Western Europe, import demand for Bangladeshi flowers is currently concentrated in Saudi Arabia (86%), with Vietnam (5%) and the EU (4%) coming in a distant second and third.[203] Other importers of Bangladeshi flowers include India, Qatar and Kuwait. Therefore, the evidence suggests that much of the market for Bangladeshi flower imports may be catering to Bangladeshi expatriate communities who seek specific flowers for cultural ceremonies. Bangladesh's flower value chain will likely need to improve significantly before it can compete in the larger, high-value, high-quality markets.

PRODUCTION AND EXPORTS

Commercial flower cultivation is a relatively recent phenomenon in Bangladesh. Since the first commercial production in Jessore District in the mid-1980s, the surface area dedicated to flower cultivation has expanded to approximately 10,000 hectares. Floriculture has thrived as farmers discover that it can be more profitable than rice or vegetables.

The main flower species include tube rose, dahlia, marigold, rose, gerbera, anthurium and gladiolus—along with lesser known species such as solidago and chandra mallika. Seventy percent of the members in Jessore's Floriculture Society produce flowers year-round, rotated with rice, vegetables and jute. The floricultural seasonality illustrated in Table 9 allows integration with other crops. Each farmer tends to grow at least two types of flowers, presumably as a hedge against risk.

[203] UN Comtrade.

Table 9 – Seasonality of Production of Five Flower Species, January–December.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gerbera												
Gladioli												
Marigold												
Rose												
Tube rose												

Source: Meeting with Hortex Foundation representative in Jessore, September 12, 2012.

Currently, there is no flower-related processing industry such as perfume production. The cut flowers are sold to local traders who transport them to markets in the Dhaka region for export or retail sale. Because the cut flower industry is relatively new and undeveloped, there is ample room for growth.

With consistent growth in the last few years, flower production in Bangladesh has now reached an annual market value of about USD 100 million. Floriculture is practiced by an estimated 10,000 to 12,000 families. The sector provides direct and indirect employment to more than 100,000 people.

Bangladeshi export data for flowers is particularly unreliable. The combination of HS reclassification in 2007 and the discontinued data reporting to the UN have meant that what was a very promising trend in 2002–2007 now shows a dramatic decline. However, the Bangladesh Export Promotion Bureau does publish data by HS Code for more recent years and it shows that flower exports for 2011 reached USD 45.7 million. This suggested annualized growth of 70% over the past decade.[204] UN Comtrade data, on the other hand, showed a 33% annualized decline over the same period.

Jessore District accounts for 70% of Bangladesh's total cut flower production. The Floriculture Society of Jessore now has 4,500 members in 75 villages cultivating 12,000–15,000 hectares. About 500 are laborers, the rest own or lease land for floriculture on which entire families are employed. Women constitute 30% of the association's members and 50% of the labor in the field. Up to three million people are employed, at least part time, in the cut flower industry. This includes 400 Jessore District traders and their staff.

The annual investment per hectare in production inputs varies by flower species: tube rose USD 5,375, rose USD 10,750 and gladiolus USD 12,285. Exceptionally, gerbera requires an initial investment of USD 122,850 per hectare because of roofing with translucent fiberglass that covers the entire growing area and the irrigation system, as illustrated in the photograph below. Thereafter, annual gerbera investment falls to a still appreciable USD 39,925 per hectare. Because of this high initial investment, gerbera is only profitable if exported. There are only 25 farmers growing gerbera on three hectares in Jessore District.

With access to credit, even poorer farmers can invest in the less expensive species. The Floriculture Society of Jessore has negotiated bank loans for its members, for which the association stands as guarantor. Most of the lenders are private commercial banks. A typical loan consists of USD 6,142 over three years at 16% interest per annum. State-owned banks extend loans at interest rates of 10%, but for smaller sums. The profitability of the cut flower industry is such that 95% of farmers repay their loans on time.

[204] 2011 was calculated based on data taken from the Export Promotion Bureau's *Export Details* document for July–December 2011, July–June 2010–2011, and July–December 2010. EPB data could not be used for all periods because it is only available online through fiscal year 2008–2009.

Credit is essential because loan repayments can be slow. A representative of the Horticultural Export Development Foundation (Hortex Foundation) told the assessment team that it takes three years for a typical flower producer to cover the high initial investment. However, for those able to make such investments, profits are generally higher than other agribusiness options. In decreasing order of profitability, the major flowers are gerbera, gladiolus, rose, tea rose and marigold. The bottom line is that floriculture can be highly profitable.

Irrigated gerbera growing under translucent fiberglass roofing in Jessore District.

Photo: CARANA.

Jessore District farmers typically sell cut flowers to traders in the local flower market early in the morning. The traders truck 60% of production to Dhaka and 40% to other Bangladeshi cities. They rely on ordinary trucks or buses. Most of the damage to cut flowers takes place during local handling and transportation: 25–50% of roses are routinely damaged en route to Dhaka.

Cold-chain economics for cut flowers do not work the same way they do for vegetables, particularly potatoes. The Floriculture Society of Jessore has a small cold-storage facility that was out of service when the assessment team visited in September 2012. The Hortex Foundation has offered to fix it, but the association has declined because it does not have the resources to maintain it after repairs.[205] Refrigerated vans used for transporting vegetables are generally not available for cut flowers. Instead, for road transportation to Dhaka, the flowers are soaked in a solution of citric acid, bleaching powder and sugar. This preserves them for 7–10 days. The mixture keeps the flowers fresh and has no known negative side effects, according to Hortex Foundation officials. If the solution were used together with cold-storage facilities, it could extend shelf life to three weeks.

There are two wholesale markets in Dhaka dedicated to flowers: Shahbag and Farmgate. Both rely on very rudimentary infrastructure. Jessore District traders sell to wholesalers who, in turn, sell to retailers. Retailers buy the cut flowers in the wholesale market and then sell them to consumers in Dhaka through a network of 1,600 sales points. The remaining 2,400 retail points in Bangladesh are difficult to access from Jessore District because of logistical challenges. This is especially true for cities such as Chittagong and Sylhet. In Dhaka, some exporters buy cut flowers that they package and export. The mark-up from the farmer to the domestic customer, typically through three intermediate stages, is

[205] It is interesting that the chief organization of an apparently profitable industry does not have resources to maintain a cold chain or even repair a cold storage facility. Further studies should explore this constraint.

of the order of 2–3 times. Confection of garlands can generate additional value. This relatively short, and apparently efficient marketing chain is based on cash sales.

The domestic market is seasonal, however, with two demand peaks a year. This poses its own challenges: inadequate shop space during peak demand periods, unsold flowers at other times of the year and high price instability.

In order to supply importers in countries like Saudi Arabia, the UAE, Singapore and Malaysia, Bangladeshi exporters use available cargo space in the same flights in which fresh vegetable are shipped. These small shipments, ranging in value from USD 1,000 to USD 2 million per year, often compete for space on the airplane. Gladiolus is the species most likely to be exported, followed by roses, tea roses and marigolds. The Floriculture Society would like to export to EU markets, but regulations on pesticides together with packaging and production timing make this difficult.

STRENGTHS

Though floriculture does not generate as much in export earnings as jute and aquaculture, it is expanding rapidly. There is robust and increasing domestic demand for cut flowers, and export markets are well established. Since Bangladesh is in the early stages of developing this value chain, there is a real opportunity to adapt it to international standards without the liability of "unlearning" archaic practices. Much of Jessore District has favorable growing conditions with ample room to increase production and diversify into new flower varieties. The area directly across the border in West Bengal, India, provides a good nursery stock. With the notable exception of gerbera, floriculture does not require significant fixed investment, which means it can take place on rented land. Indeed, 60% of Jessore flowers are grown on leased land. The chairman of the Floriculture Society of Jessore noted that he had recently expanded his own production of cut flowers by leasing additional land.

CHALLENGES

The Floriculture Society of Jessore emphasized that the Government of Bangladesh (GOB) does not have an industry strategy for cut flowers. The value chain nonetheless benefits from government programs because of the classification of flowers as vegetables.

Although the Hortex Foundation has a specialist flower unit in Jessore, it is a relatively new industry in Bangladesh. There is a lack of extension services and scientific knowledge regarding cut flowers. In addition, farmers do not have enough information about planting varieties or technologies, such as good agricultural practices (GAP), integrated pest management (IPM), quality certification or organic farming techniques. They purchase planting material from private companies who provide them with basic information. Thereafter, they save their seed, tubers, rootstocks and cuttings for the next growing cycle. Farmers also have little knowledge of consumer prices for flowers in Dhaka, which fluctuate significantly.

Smallholder farmers have limited infrastructure investment capacity. Approximately 20–25% of the land devoted to floriculture is cultivated by large commercial farms. Otherwise, the farms are generally small, less than half a hectare each. The land can be owned or leased. Practically all production takes place under open-field conditions, leaving crops vulnerable to weather conditions. Still, the assessment team did observe covered gerbera plantations.

There is little evidence of private sector participation in floriculture R&D, which is critical for a developing sector. Research into new varieties and technologies for open-field production is conducted by the Floriculture Division of the Bangladesh Agricultural Research Institute (BARI), which has so far acquired many varieties of flowers for local production. However, farmers have limited access to this

expertise. In addition, there is no evidence of a quality assurance system for the acquisition and use of planting materials received from private companies.

Farmers need assistance in solving technical problems. For instance, there is a three-month dormancy period for seeds during which they need to remain in cold storage. However, this corresponds to the potato schedule, which takes precedence and constrains flower production. Also, cold-storage techniques for vegetables are inadequate because the temperature required for flowers is different. Farmers generally do not know what the appropriate temperatures are for flower seed germination. In addition, gerbera cuttings used to be entirely imported. The Hortex Foundation has worked with Building Resources Across Communities (BRAC) to help farmers source the cuttings locally. As a result, the cost has decreased dramatically. The next step is to do the same for lilies and orchids.

Additionally, some of the production inputs are not available in Bangladesh. This is especially the case for nets used to keep daisy buds closed or the plastic tubing to protect roses. The Hortex Foundation is trying to source them locally, but Bangladeshi suppliers quote a high price for the relatively low orders made by Jessore traders. Farmers also mentioned a lack of high-quality mother stock in Bangladesh. In Dhaka, a gerbera retailer reported sourcing his seedlings from the Netherlands, though much of it is smuggled from neighboring West Bengal in India. Some high-quality seeds are lacking for species such as orchids and carnations.

The available insecticides and fertilizers are not specifically formulated for floriculture. In addition, farmers do not know how to handle pesticides and lack awareness about EU import rules on acceptable pesticide levels. The same situation applies for the use of fertilizers and other chemicals. Because of incorrect quantities and poorly timed applications, flower yields in Bangladesh remain low. Farmers purchase their inputs from shops that also supply fruit and vegetable growers. As a result, most of the technical information is received directly from the salesperson. Some chemicals require mixing before use. This is typically done in the field by hand without adequate protection.

Most traders do not use or cannot obtain the plastic tubes to protect roses during transit and handling. For the domestic market, the stems are rolled into bundles and wrapped in wet burlap before being transported. This form of packaging, while less costly, results in significant losses. The team witnessed one truck being loaded where the flower bundles were hurled from the roadside into the back of an open truck. A packer in the back of the truck caught the bundle and jammed it into an available space while standing on other packed bundles, crushing their contents. The exception to this artisanal handling is gerbera, which is such a high-value crop that both domestic and export consignments receive quality packaging. As flower shippers consider the losses they incur from poor handling, there is a trend toward the use of cartons, even for domestic shipments. The Hortex Foundation has also proposed adding shelves into trucks to load several layers of buckets of flowers.

Loading flowers in Jessore District for transportation to Dhaka.

Photo: CARANA.

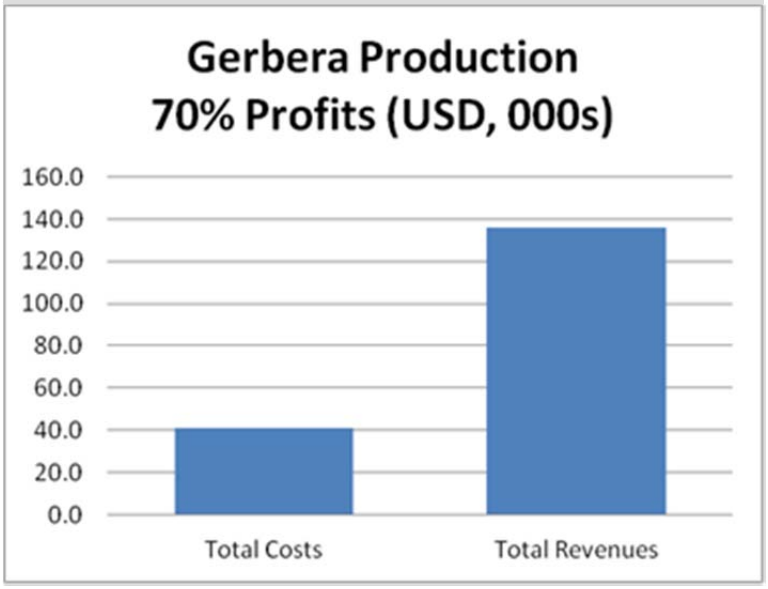
The transportation links to export markets from Jessore District are uncertain. Biman, the national airline, told the assessment team that Dhaka had no available space at the airport for cold storage. Cut flowers must wait off-site at the exporter's facility until they are cleared for air transport. Biman does not provide this clearance until the day of the flight. The cut flowers must then compete for air cargo space with higher-value goods such as pharmaceuticals, ready-made garments and live crab. If there is space available, the airline informs the Floriculture Society of Jessore, which then allocates it to one of its members. Once cleared for air transportation, a common complaint is that the flowers are stored in hot, unfavorable conditions before shipping. If an exporter's flowers cannot be shipped on a particular day, they must be diverted to the local market.

Flowers are not currently being processed into perfumes or extracts. However, they can be assembled into garlands or decorative arrangements using ornamental foliage, also cultivated by flower growers. Where this type of assembly is performed, it is generally done after being purchased by the retailer. This activity is dominated by women laborers.

OPPORTUNITIES

There are opportunities to increase flower exports to the Middle East and Malaysia. There is also an untapped market for Bangladeshi cut flowers in India. Gladiolus and tea rose show a particularly high export potential. However, several constraints must be considered. First, some importers require a minimum supply that exporters cannot provide. Second, exporters must juggle vegetables and flowers in their air cargo, depending on availability. Cut flowers are more profitable than vegetables, but their quality and supply is uneven. Third, a dedicated export-oriented operation in Jessore District would benefit from a packaging hub. Improved packaging would reduce damage and make flowers more apt for air cargo shipments. The assessment team heard of one account of flowers being refused as cargo because of leaking and poor packaging. This posed a hazard to the rest of the shipment, which included fruits and vegetables. Better packaging would also reduce the 25% damage that flowers incur on the way to market in Dhaka. Fourth, exports of cut flowers must meet international pesticide-residue norms, an issue that remains unaddressed.

Figure 60 – Estimated Profits Per Hectare from Gerbera Production.



Source: Field Interviews in Bangladesh, 2012.

The global market for cut flowers is valued at approximately USD 160 billion per year. Asia is well positioned to become a major player. Regionally, the competitors have branded their offerings: Thailand for orchids, India for assortments and China for roses. Bangladesh has a long-term opportunity to identify a niche and develop its own branding strategy. In addition to cut flowers, there is potential to explore niches in value-added products. One segment that could provide employment for women and a distinctive edge for Bangladesh is flower assemblies for special occasions. Additionally, there are traditional value-added products based on essential oils and extracts (*agar* and *attar*). To maximize its competitive advantages, Bangladesh must first become an efficient global producer.

The benefits of success in this sector would be direct and immediate because farmers would retain the profits, rather than processors or middlemen. Flower cultivation could provide 3–5 times and 1.5–2 times greater returns than rice and vegetable cultivation, respectively. An analysis of gerbera production confirms this estimate, showing that a farmer would post profits of USD 70,635 a year per hectare (see Figure 61).

CONCLUSIONS

The cut flower industry in Bangladesh is at an important juncture and it has already established a firm foothold in the SSW. Targeted interventions in this sector could significantly raise incomes for farmers and their families.

The large domestic market offers an opportunity to develop essential capabilities before pursuing exports. Initial interventions could focus on farm productivity by resorting to new varieties and extension services. They could also focus on technology such as roofing, irrigation and chemicals. An additional set of interventions might include the market delivery system, access to market information, improved packaging, improved transportation and shelf life. Once these are in place, Bangladesh will be able to develop additional capabilities required to penetrate international flower markets.

Specific recommendations at different levels of the market chain include:

<u>Farmer/inputs:</u>

- Develop extension and outreach capacity for farmers on the optimal levels of inputs and care in the use of pesticides, as well as on market opportunities.
- Promote specialist nurseries together with specialists in India.

- Reorient national research institutions toward the floriculture sector.

Wholesaler/transporter:

- Encourage private sector investment in refrigerated trucks to convey flowers from Jessore to Dhaka.
- Facilitate bulk orders for packaging.
- Sensitize shippers about flower-specific handling techniques.

Export markets:

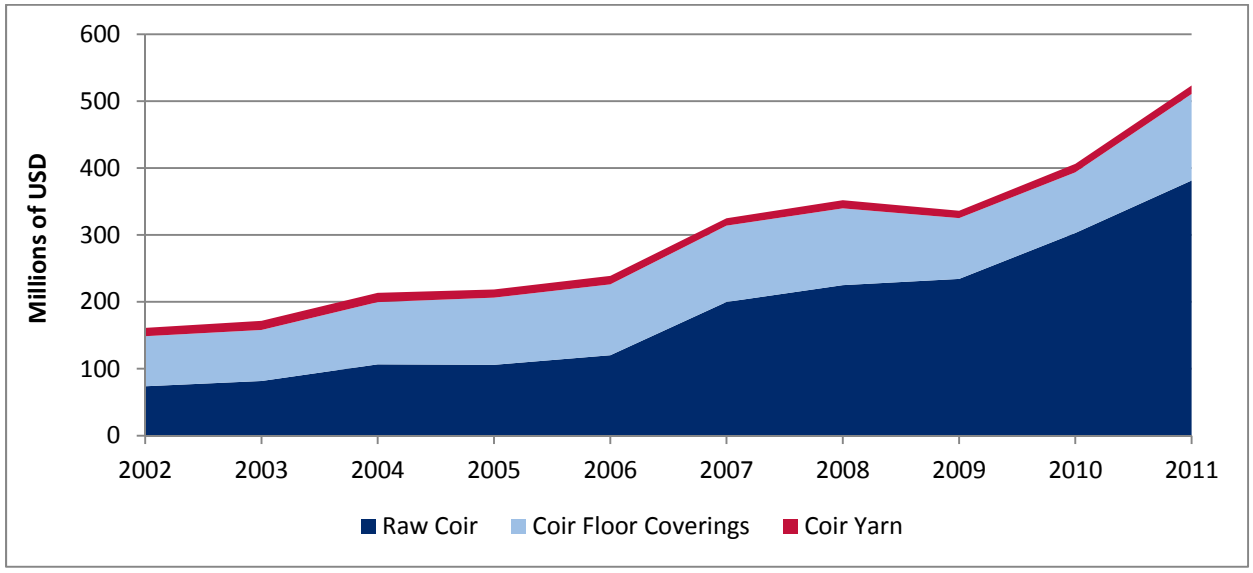
- Expand Middle Eastern markets so that exporters can ship dedicated planeloads of flowers.
- Develop Bangladesh's reputation for niche varieties in destination markets.

ANNEX 6: COCONUT AND COIR

GROWTH OPPORTUNITIES

In the last decade, world demand for coir products has risen steadily, at an annualized rate of about 14%.[206] The majority of this growth has come from demand for raw coir, which has grown at an annualized rate of 20%. China has been the primary driver of this demand increase. In 2002, China accounted for just 10% of total raw coir demand. By 2011, the figure had risen to 55%.[207] However, China accounts for less than 1% of import demand for coir floor coverings or coir yarn. This booming demand for raw coir in China is driven by a growing demand for coir mattresses. In some cases these mattresses are simply stuffed with raw coir. But China has also set up factories that produce the higher-quality rubberized mattresses.[208]

Figure 61 – World Imports of Coir by Product, 2002–2011.



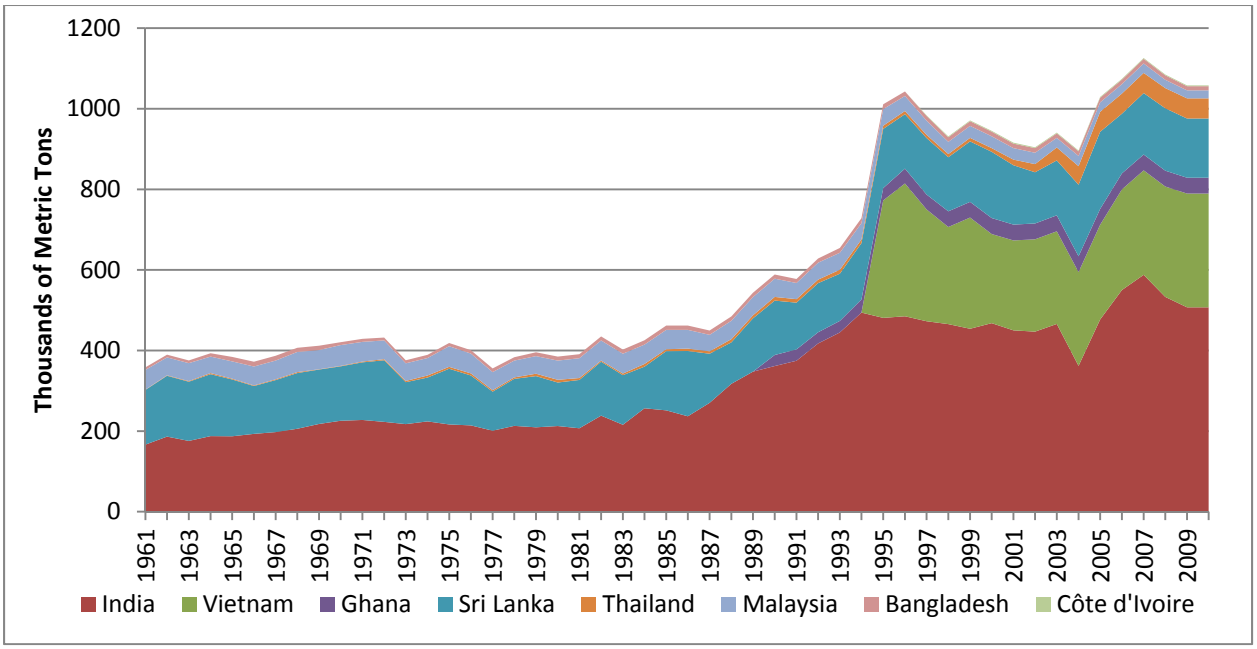
Source: UN Comtrade.

Along with world demand, global coir production has also been increasing. It grew quite dramatically in the early 1990s, from about 600,000 metric tons (MT) of coir in 1991 to 1 million MT by 1995 (see Figure 63). This output growth was driven by a spike in production in India, as well as by the entrance of new producer countries such as Vietnam serving the booming Chinese market.

Other major importers of coir and coir products over the past decade have included the United States, Japan and several European countries. Demand in these countries is driven by a growing desire for natural fiber products used for insulation, car seat cushions, door mats and anti-erosion textiles.[209]

[206] UN Comtrade.
[207] Own calculations based on UN Comtrade data.
[208] Leson, G., "Coir in a Nutshell," Fiber Futures.
[209] Ibid.

Figure 62 – World Coir Production by Country, 1961–2009.



Source: FAO Stats.

Reliable data on coir prices was difficult to find. One FAO Stat chart published as part of the FAO's Future Fibres Initiative shows a steady rise in prices between 2007 and 2011, reflecting a continued increase in demand (see Figure 64).[210]

Bangladesh is currently a minor player in the global market for coir. Despite the fact that India and Bangladesh have similar environmental advantages for coconut production, and India is a major producer and exporter of coir, Bangladesh lags behind. It has never accounted for more than 3% of world coir production and captures only a small share of the world export market.[211] Because coir is a niche market and Bangladesh has not reported trade data to UN Comtrade since 2007, export statistics are unreliable. However, the data available seems to indicate an erosion of Bangladesh's comparative advantage for coir products. In 2002, Bangladesh had a strong comparative advantage in the production of raw coir and coir products in general, but this quickly tapered. There were some indications that Bangladesh was increasing its comparative advantage in production of coir yarn, but the data after 2007 is sparse.

Bangladesh has also failed to take advantage of the largest import markets for coir products. Much like in the world market in the last decade, 89% of demand for Bangladeshi coir has been driven by raw coir imports. But the largest importers of raw Bangladeshi coir were the Philippines, the UK and Spain. China, despite being the leading global importer of raw coir, accounted for only 3% of all imports of Bangladeshi coir. The import demand data for coir yarn and floor coverings from Bangladesh does not suggest any growth in those sectors either. However, this may be attributed to weak data reporting.

[210] FAO Future Fibres Market Prices. http://www.fao.org/economic/futurefibres/prices/jp/. Accessed 12-13-12.
[211] FAO Stats.

Coir is just one part of the total coconut value chain and coir production is still influenced by the larger crude coconut-oil industry in Bangladesh. Despite its status as a niche industry, coir has proved to be very profitable for some Bangladeshi firms[212] and there is clearly a growing global demand.

PRODUCTION AND EXPORTS

Coconut trees are found across SSW Bangladesh, with most rural households owning several trees. In this region, Bagerhat is the district best known for coconut production and processing. The trees rarely grow on plantations, but rather in forested areas, around houses and along field boundaries. They can also be found alongside fish and shrimp farms. Yields vary no more than 2–5% annually. Coconut trees are salt-tolerant and therefore well suited to the increasingly saline soil conditions of the SSW. Indeed, a Philippine Coconut Authority researcher found that applications of common salt as fertilizer increased coconut yield and profitability.[213]

Coconuts also respond well to conventional fertilizers, though Bangladeshi farmers rarely apply them to their trees. Three to four years of regular annual fertilizer treatment can increase the mean number of nuts harvested per tree annually from 43 to 105, a growth of 142%. As part of this additional production, mean yields of kernel meat (copra) per tree increase by 79% from 1.4 to 2.5 metric tons (MT). The annual cost of recommended fertilizer does not exceed a dollar per tree annually.[214] The assessment team did not gather information on the productivity of coconut varieties in terms of coir quality or oil content.

Coconut harvesters, mostly young men, gather both green and ripe coconuts. The unfertilized coconut tree provides 43 coconuts of an average weight of 1.15 kg each, or approximately 50 kg of nuts per year. South and southwest Bangladesh produces 200,000 MT of coconuts annually,[215] or the equivalent of 4 million trees. Young men climb trees to collect the coconuts at a rate of 15–20 coconuts every 10 minutes. Allowing time to move from tree to tree and convey the coconuts to a sales point, the harvesting rate could be at 2 trees per hour, or the equivalent of 100,000 youth-hours of coconut-generated work per year. At an assumed 2012 rural unskilled wage rate of BDT 10 (USD 0.12) per hour, coconut harvesting generates income of BDT 1 million (USD 12,285) for youths. They may also earn wages at other stages of the multiple coconut value chain.

The market chain for green coconuts takes the untransformed coconut to local or regional markets for direct consumption of coconut juice. The coconut juice and the kernel meat can also be transformed. Some of the products from transformation include vinegar and coconut wine, for which there is little demand in Bangladesh. Consumers of fresh coconuts typically discard the husk or use it as wood fuel.

Farmers typically allow the rest of their coconuts to ripen. They then harvest them and sell them into a market chain that exploits them for different products. The ripe coconut chain is more complex than the one for green coconuts. The discussion below concerns only uses for fully mature coconuts.

The ripe coconut has three concentric layers. Each layer serves as the raw material for a variety of products:

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[212] Interview with Bagerhat Coir Products Manufacturer

[213] Magat, S. et al., « Coconut yield and profitability under two practical fertilizer options : common salt (sodium chloride) and multi-nutrient *14N-0P_2O_5-20$K_2$0-15Cl-4.5S-0*.02B applications on bearing trees," Philippine Coconut Authority, Research, Development & Extension Branch, nd.

[214] Magat, S. et al., "Fertilize your coconuts!" Philippine Coconut Authority, Research, Development & Extension Branch, nd.

[215] N. Martinez, "Feed the Future, horticulture: crop statistics in the southwest region of Bangladesh," PowerPoint presentation USAID/Bangladesh, November 3, 2001.

- husk (fiber for ropes, mats, baskets and geotextiles)
- shell (fashion accessories, belts, buttons and handicrafts; activated charcoal; fuel)
- kernel meat (oil for cooking, desiccated coconut, soaps, detergents, hair oil and cosmetics; traditional medicine with anti-microbial and anti-caries properties; copra meal for livestock)

Producers can generally make only one of the final products listed from each layer, though sometimes they can market the residues as fertilizer or wood fuel. The ability of the coconut sector to generate income and jobs depends on the profitability of each of the three value chains.

Coconut harvesters can remove the fibrous husk, separating it from the hard shell and its contents. They can then sell the complete mature coconut to an oil processor. In either case, the coir processor buys the husk and separates the long fibers from the associated dust. The processor then discards much of the dust, even though it has potential as fertilizer, particularly for flowers. Indeed, some flower farmers in Jessore District use it to fertilize their fields and rose growers in the Netherlands have begun to import it.

However, the main product of the coconut husk is the coir fiber, an intermediate product used in a range of natural fiber-based materials. Processors may use a machine that produces the longer-fiber 'Bristol' coir that is suited for production of brushes. More commonly, they may use another machine that yields 'mixed decorticated' coir—the raw material for twine, mats and mattresses. All these final products are consumed domestically, although exports account for a small quantity. A Bagerhat factory visited by the assessment team routinely exports about 20% of its coir production. Mats require the use of an adhesive to bind the fibers together, either resin or rubber. Using resin is cheaper and produces a lighter, air-tight product, which can become brittle over time. The more expensive rubber produces flexible and waterproof matting that breathes. Rubber is a natural Bangladeshi product and the coir-rubber products can be marketed as 'organic'. Separate factories spin coir fiber into twine and rope.

Compressing coir and rubber into sheets at a factory in Bagerhat (left). Production of coir matting and coir soles at the same factory (right).

Photo: CARANA.

Spinning coir rope at a plant in Jessore.

Photo: CARANA.

The rest of the mature nut goes to the coconut oil processor, who extracts the meat kernel from which the oil is extracted. The oil can then be refined into different grades. The high-carbon residue can serve as a livestock feed or, in powder form, as an input toward the manufacturing of anti-mosquito coils. Artisans can fashion accessories, belts, buttons and handicrafts from the hard shell.

Traditionally, coconut oil has been the sector's major finished product. Producers extract refined coconut oil from copra or dried coconut kernel. It undergoes processing and different levels of bleaching and deodorizing. A Bagerhat coir producer who previously extracted coconut oil classified it into three types:

- Bulk/crude oil (greater than 0.5% acidity) that is made in SSW Bangladesh and on which the processor pays 15% VAT. The coir manufacturer explained that oil producers sell it in the local market for villagers to use as a hair-care product. However, this oil is not optimally refined and may lead to hair loss or color change.

- Hair oil is an odorless and expensive refined product (less than 0.5% acidity). It is taxed at about 40%, whereas imported hair-quality oil pays 5% for VAT and duties of 23%. In total, the importer pays about 30% in taxes.[216] The resulting incentive structure promotes imports and discourages domestic production of the higher value and potentially more lucrative hair oil.[217] Instead, Bangladeshi producers make bulk/crude oil.

- Cooking oil (also high in acidity) that has a coconut smell and flavor. This product contains good saturated fats and has many cooking applications, in part due to its high smoke point. It also has baking uses.[218]

The Bagerhat coir producer explained that he had switched from producing bulk coconut oil to producing coir because it was twice as profitable. Canola, palm, peanut, soybean and sunflower oils have

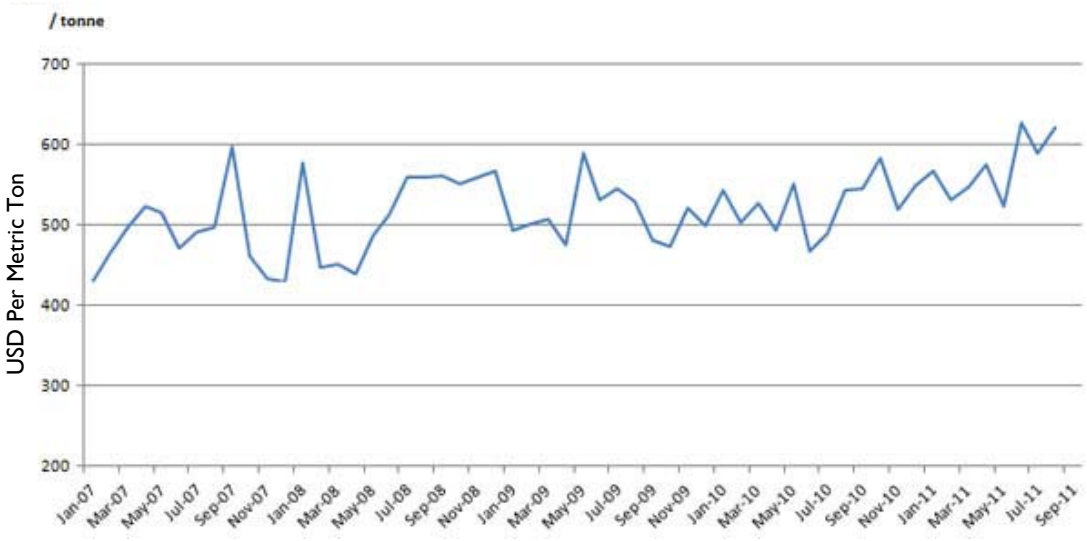
[216] The imported hair oil comes from India, where exporters of coconut oil receive an export subsidy from the government.
[217] Bangladesh imports around 20% of its coconut oil requirements (USAID: 2011, 25).
[218] Marketing to affluent consumers focuses on niche products such as virgin coconut oil (extracted from fresh coconut meat without using high temperatures or chemicals) and organic coconut oil. However, it is difficult to verify that organic coconut oil is really organic because of the diverse non-plantation origins of coconuts in Bangladesh. In addition, it is nearly impossible to tell the difference between organic and non-organic coconut oil in terms of flavor and odor: http://www.livestrong.com/article/22890-types-coconut-oil/. Coconut oil is also marketed as an antidote to heart disease: http://www.coconutresearchcenter.org/article10132.htm. It is also said to fight tooth decay: http://www.bbc.co.uk/news/health-19435442.

overtaken coconut oil and have driven down prices. At the same time, the quality standards have risen, leaving coconut oil less profitable than in the past.[219]

Coconut wood can provide raw materials for construction and furniture products. It is highly grained and attractive. But it is also difficult to work, dense and available in smaller widths than other woods. Coconut leaves can also be used to make woven products. In addition, the growing tree deters erosion and contributes to land stabilization in coastal and riverside areas, an important side benefit in a region plagued by erosion and waterway siltation.

Figure 64 shows a global reference price for coir from 2007 to 2011. Note that prices vary intra-annually by about 20%, but that the inter-annual trend shows little fluctuation.

Figure 63 – Coir Fiber and Products (FAO Indicator Price FOB), January 2007–September 2011.



Source: FAO.

STRENGTHS

Coconut production is well suited to SSW Bangladesh as it is highly weather resistant. Currently, there is a cluster of about 40 small firms in Bagerhat District processing coconuts and coir profitability has risen. The price of coconut husks has increased by a factor of two to three from 2007 to 2012. At the same time, the price of rope marketed from the Jessore factory has gone up more than threefold.

Income from coconut production from the four million trees in SSW Bangladesh is widely distributed. In addition, coconut production provides employment for women and youths. Young men are primarily involved in coconut harvesting, while women contribute to processing. Coir processing for twine and rope production observed by the assessment team in Jessore relied mostly on a female labor force. However, the Bagerhat coir factory employed mostly men.

Despite little government support, the industry is dynamic and innovative. For example, Creation, a company with over 500 employees (mostly women) and which has received USAID assistance, produces

[219] Pacific Agribusiness Research & Development Initiative, 2011. *Coconut Chain Review*, November 2011.

home-décor and personal-adornment articles for export[220]. Current product development demonstrates that there is potential to scale up the product lines. The old-fashioned, seasonal oil-production method required sun drying before extracting the oil. Now the process is mechanized and can take place year-round.

The Bagerhat manufacturer producing a diverse range of products is able to design and build proprietary equipment to meet client needs. The owners acquired the initial designs by copying and adapting equipment used in Indian coir factories. They are also open to others learning from their experience and improving on their equipment.

WEAKNESSES

A major weakness in the value chain is the unreliable supply of coconuts. Coconut production has dropped over the last five years. The Jessore factory reported that the size of coconuts also fell over that period. The supply of raw material (coconut husks) has sometimes limited coir production in Bagerhat District. Raw material availability at the Jessore coir factory also depends upon a coconut oil factory. When the price of oil falls, coconut oil production decreases and there are fewer husks to manufacture coir.

Electricity outages also suppress productivity. At the Jessore factory, one hour per shift is lost on average due to power outages. An increase in electricity prices has also made some processing unprofitable. Higher prices mean that the Jessore factory no longer produces thin sheets of coir fiber for export because it requires mechanical drying. Production can also be halted due to weather conditions. Flooding at the Bagerhat factory often creates humid conditions that inhibit the optimal transformation of fiber into coir. When the assessment team visited the factory, it was closed due to flooding.

Another weakness in the coir industry is minimal government support. According to the Bangladesh Export Promotion Bureau (EPB), in 2011–2012 coir products benefited from cash incentives of 20% if local raw materials constituted more than 80%. The cash incentive stood at 15% if they constituted more than 50% of the fished product. However, the Bagerhat coir processor claimed that there was no export subsidy for coir. There are no other incentives for coir products such as energy subsidies, soft loans or tax breaks. The Bagerhat manufacturer said his line of credit had an interest rate of 17%. If he were reclassified as an agro processor, he would qualify for a rate of 10%.

High taxation of coconut oil production creates an incentive structure that favors imports of high value hair oil, preventing domestic producers from supplying higher value-added product to the local market. The tax structure also causes poorer hair-oil users to substitute bulk oil for hair oil.

Another weakness in the value chain is that coir-producing firms cannot find buyers for coir dust by-products, even though it can be used as a flower fertilizer and a component in mosquito coils. The Jessore factory used to sell the coir dust as an input to a local mosquito coil factory, but that plant closed down. It is not clear if this is a one-off event or a trending pattern. The Bagerhat manufacturer said there was still high market demand for mosquito coils.

[220] In the past USAID has provided support for Creation representatives to attend trade fairs. http://www.hktdc.com/manufacturers-suppliers/Creation-Pvt-Limited/en/1X05K2S2/

CHALLENGES

The wide diversity of coconut-based products poses a challenge. No analysis has been done to determine optimal product mixes for different market conditions.

Bangladesh does not have an overarching coconut authority similar to the Indonesian Coconut Forum, the Coconut Development Board of India, or the Philippines Coconut Authority. The country also lacks a dedicated coconut research organization such as those of Indonesia (Indonesian Coconut and Other Palms Research Institute), Papua New Guinea (Cocoa and Coconut Institute), the Philippines (Albay Research Center and the University of the Philippines' Institute of Plant Breeding) and Vietnam (Research Institute for Oils and Oil Palms). Bangladesh is also not part of the 18-member Asian and Pacific Coconut Community.

Access to international markets has posed considerable problems for coir producers. The Bagerhat manufacturer complained of little or no export assistance from the EPB. It was difficult for the owners to advertise abroad and to attend trade fairs. In India, coir is also used for carpet backing, but the Bagerhat manufacturer lacked business connections to manufacturers across the border.

Even when international buyers are interested, supplying them can be a challenge because of finance and transportation. The Bagerhat factory was exporting to South Korea in 2012, but shipping via Mongla Port was unreliable due to low levels of ship traffic in and out of the port. Chittagong Port was so far away that the factory lost the customer. In addition, banks will only provide lending once an order has been received. Even though the Bagerhat manufacturer is well established, the owners only have a single line of credit and cannot obtain project loans to expand their business.

Manufacturers are also at a disadvantage when trying to capitalize on the growing demand for organic and environmentally friendly products. Currently, Bangladesh cannot obtain a foothold in the market for organic coconut products because of the absence of coconut plantations and the difficulty in documenting chains of custody.

OPPORTUNITIES

Additional coconut production will come on-stream from new plantings in response to the significant rise in coconut prices since 2007. South and southwest Bangladesh also has great potential for further expansion of coconut production on saline soils and the application of compost, fertilizer and salt.

In 2011, USAID's *Bangladesh Value Chain Selection and Rapid Analysis* determined that the coconut sector is 'dynamic…with significant SME investment and expansion underway based on perceived opportunities in Bangladesh and overseas'.[221] The coconut industry in Allepey, Kerala State (India) where '10,000 firms and tens of thousands of households [are] engaged in the sector' gives a sense of the scale to which Bangladesh's coconut industry could aspire.[222] The sector's expansion so far in Bagerhat could provide a stepping stone to diversification into coir products.

In addition to traditional coir products, there are also opportunities to market coir dust. The 2011 USAID report mentioned the dust being used as a component in organic fertilizer, a new market linkage. Another possibility is the production of coconut water and desiccated coconut. Currently, neither of these products is produced at industrial scale, although there is high demand in global markets.

[221] "Bangladesh value chain selection and rapid analysis: a roadmap for inclusive growth and non-food value chains," USAID, December 2011.
[222] Ibid, 23.

CONCLUSIONS

The complexity of the multiple value chains in the coconut sector requires an analysis of interacting economic forces to establish the profitability of each chain, its beneficiaries, its interactions with other chains, its potential to generate exports and substitute for imports, as well as its constraints. This assessment only touches superficially on some of these aspects. Its prime recommendation is to conduct an in-depth analysis.[223]

To build on sector dynamism, the coconut sector needs:

- A diagnostic study of the best options to maximize value-added production and job creation from a value chain with many possibilities.
- A private-sector-driven oversight organization to promote and coordinate coconut value chains.
- A research institute focusing on coconut agronomy and the development of product lines from the coconut value chains.
- Support for a diagnostic study and the creation and sustainable operation of an oversight organization and a research institute, in liaison with other initiatives to provide assistance to revenue-generating and job-creating enterprises.

[223] The assessment team visited three coir-product producers: one each in Jessore, Bagerhat and Dhaka. The Jessore processor focused on twine and rope, using Indian machinery. The Bagerhat processor had a range of coir products, mostly based on coir matting. The Dhaka company owned the Jessore factory, among others, and exported a range of coir products.

ANNEX 7: EXISTING AND PLANNED DONOR AND LENDER SUPPORT

To avoid recommending activities that may duplicate project support already underway and to help identify possible synergies, the assessment team noted the following projects that share many of the objectives of the USAID with respect to development of the FTF region of Bangladesh.

USAID

The WorldFish Center: Feed the Future Aquaculture Project

World Fish works in both the fishing and aquatic agriculture sectors of the FTF region. The project works closely with the Bangladesh Department of Fisheries, the Fisheries Research Institute and the Bangladesh Agricultural Research Council to improve shrimp and fish seed, educate households on aquaculture and nutrition, develop saline resistant species, and improve aquaculture regulation and policy. While some of the commercial aquaculture is focused on domestic consumption, much of the shrimp production is export-oriented.

IFDC: Accelerating Agriculture Productivity Improvement in Bangladesh

IFDC is focused on improving farmers' use of agricultural inputs such as water and fertilizer to increase crop production. It also supports improvements in farm technology in order to increase yields for domestic consumption. Currently, the rice farmers they work with do not export.

Chemonics: Poverty Reduction by Increasing the Competitiveness of Enterprises (PRICE)

The PRICE project focuses on the aquaculture, horticulture and leather sectors. The goal is to improve competitiveness of these industries by building skills and identifying market opportunities. The project has already succeeded in creating over 30,000 jobs and generating more than USD 50 million in exports.

Key value chain interventions have included training to improve marketing and business management skills and development of viable business and marketing plans, technical assistance in upgrading production and processing technologies, and capacity building on quality and labor standards for firms and private sector associations. PRICE has also worked to facilitate public private partnerships and has established Business Service Centers (BSCs) with advisors who help small-scale farmers connect with large processors and retailers, thus improving business networks within each value chain.

Agricultural Value Chain RFP

This RFP aims to improve food security by developing agricultural value chains. The project design must seek to promote food security using a market-systems approach to achieve sustainable broad-based economic growth that will continue beyond the life of the project. Both food and non-food agricultural products will be addressed and the Contractor must seek to address common constraints across multiple value chains, including necessary support services that are currently unavailable.

Agricultural Extension Capacity Building Activity

The Agricultural Extension Capacity Building Activity aims to improve agricultural extension for a wide variety of high value crops by making it more demand driven and commercially oriented and improving the flow of information between farmers and researchers. The project will also focus its assistance on women and smallholder farmers, increasing the use of information and communication technologies in extension services, and improving the training and expanding the role of extension agents. Overall the program's goal is to upgrade both the quality and outreach of extension services.

Agricultural Inputs

The goal of this project is to increase agricultural production and reduce poverty by improving the market for agricultural inputs. The implemented project must work to build forward and backward linkages between input producers, importers, wholesalers and retailers. This will be done by developing a network of private input retailers, improving their training and providing them with financing to ensure the distribution of high quality products. The program will also reach out to agricultural input associations and major wholesalers, and provide them with additional training and technical assistance.

Mobile Money Assessment

A planned assessment regarding the potential of mobile banking to reinforce other FTF activities.

Loan Guarantee Program

This program is still under review. The goal would be to increase access to finance in the FTF region. The guarantee program would coordinate with existing and planned programs in the region and ideally develop specific farmer and targeted loan products to support existing value chain projects.

DFID

DFID's work in the FTF region emphasizes business development and access to finance for SMEs. In the future, it expects to focus more on peri-urban industries, skills development and infrastructure advisory. These business-enabling projects will likely complement USAID's proposed focus on trade promotion in the FTF area.

Regulatory and Investment Systems for Enterprise

This program is focused on regulatory reform, reducing the burden on entrepreneurs and making Bangladesh a better place to do business. It also works on improving access to finance, and increasing market linkages and services for SMEs. The project helped pass the Economic Zones (EZs) Act in August of 2010, thus providing the framework for EZs throughout Bangladesh.

Katalyst Phase II

A market-development project focused on the agricultural sector, the Katalyst project aims to increase the competitiveness of micro, small and medium-sized enterprises. It focuses on corn, vegetables, fish, prawn, potatoes, jute, furniture and crafts. The project has been implemented nationwide, but with a special focus in Dhaka, Faridpur, Rajshahi, Rangpur, Bogra and Jessore.

Katalyst has worked with both the private and public sectors to improve and expand business service markets. This has included developing contract farming, establishing local trade associations and farmer

networks to promote access to credit and information, and working with the GOB to liberalize import regulations for jute seed.

In the vegetables sector, Katalyst has worked with farmers to improve cropping patterns, increase the access to pesticides and improve market access. In fish and shrimp, the project has promoted exportable species and improved inputs and standards compliance, as well as the export-oriented value chain for frozen fish and prawn products. In the jute sector, Katalyst has improved access to quality seed and new retting technology. It also plans to analyze mill efficiency and product diversification.

Promoting Financial Services for Poverty Reduction

This nationwide project has three main components. The first is improving the access to and use of financial services for poor farmers and micro, small and medium-sized enterprises. Secondly, it is helping to establish a microcredit regulatory authority in Bangladesh. Thirdly, it has supported training, access to information and capacity development of the Credit Information Bureau.

Making Markets Work for the Poor

This project is focused on the role of the poor as producers and suppliers in various value chains. It seeks to correct market failures through instruments such as contract farming and improved access to credit. Thus far, the project is still gathering information on existing projects that use the "Making Markets Work for the Poor" approach, such as Katalyst (see above).

South Asia Enterprise Development Facility

DFID is working with NORAD and the IFC to promote SMEs through a value-chain approach. Most of the work in the SSW focuses on using private companies to promote saline and drought-tolerant seeds developed by the GOB.

Future projects:

DFID anticipates that future projects will target improved access to financing for SMEs, vocational training, infrastructure advisory services and inclusive business. It does not expect to do much work in the agricultural sector and will concentrate on issues related to urbanization and building skills in urban and peri-urban industries: construction, leather and RMG.

For the financial sector, DFID is planning a project to bring down interest rates by automating the Credit Information Bureau for corporate entities (5 years, £10-15 million, USD 16–24 million). In infrastructure, DFID seeks to increase FDI in infrastructure by providing technical advice and information to the public-private partnership office of the GOB (5 years, £15-20 million, USD 24–32 million).

ASIAN DEVELOPMENT BANK

ADB's programs in Bangladesh focus on trade facilitation by improving infrastructure and capacity. The much-needed investments in regional transportation, ports and training would complement USAID initiatives in trade promotion.

ADB is focused on five sectors of the economy: energy, transportation, education, urban development, and agriculture and natural resources. The work in agriculture is not related to production, but instead

on developing farm-to-market links through infrastructure. This includes roads, loading points for boats, warehouses, marketplaces and trading points, and rural water management.

The work in transportation and trade facilitation looks beyond Bangladesh to regional issues in hard and soft infrastructure. Over the next five years, ADB plans to invest USD 250 million per year in rail projects, emphasizing the development of a trans-Asian network. It is also involved in improving road links with neighboring countries, including building warehouses and weighing stations to control truck axle weights at Benapole. In November 2012, ADB announced that it would provide USD 198 million, with an additional USD 60 million from partner organizations, to fund a partial upgrade of one of Bangladesh's most critical regional transport corridors, together with two land ports. This funding will be implemented under the SASEC Road Connectivity Project, and the bulk of the funds are expected to go toward improvements in the Dhaka-Chittagong transport corridor. However, there is no ADB funding for improved roads, parking or other infrastructure at Petrapole. For Mongla Port, ADB is carrying out a feasibility study before investing in port improvements.

In November of 2012 ADB announced a USD 48 million program to help goods transit smoothly in and out of Bangladesh, Bhutan and Nepal. The program will overhaul the time-consuming, costly and opaque Customs procedures that inhibit intraregional trade. This initiative is part of the South Asia Sub-regional Economic Cooperation (SASEC) program. India is a SASEC member, but is funding its own trade facilitation reforms and is not included in the ADB program. The project will help Bangladesh adopt an international Customs administration protocol, upgrade its automated Customs management systems and establish web-based electronic trade portals. These measures will provide importers and exporters with timely, accurate information.

EUROPEAN UNION

The EU's program portfolio emphasizes improvements in technical capacity, training and regulation. These are all areas that would be valuable support for USAID projects aimed at increasing trade in the FTF region.

Bangladesh Trade Policy Support Programme

The EU has worked with the Ministry of Commerce to help develop a comprehensive trade policy and improve ministerial capacity in the negotiation and implementation of trade agreements. The program also provides support to the Bangladesh Foreign Trade Institute and helps build staff skills in research, advocacy and policy development, as well as assisting the staff in developing service products for the private sector. Support is also provided to the Export Promotion Bureau in its effort to increase port automation and avoid forgery for exports destined to the EU.

Bangladesh Quality Support Program (BQSP) & Better Work and Standards (BEST)

The BQSP program (which ended in 2010) aimed to increase exports by improving quality standards and testing in Bangladesh. The EU retrofitted labs and improved standards to meet EU compliance standards. It also sought to improve overall testing policies. The BEST program's Better Fisheries Quality (BFQ) component is the follow-up to the original BQSP program. BFQ focuses on improving the inspection and control operations at all levels of the shrimp and fish supply chain, including developing credible lab testing, and improving private firm's productivity and compliance with market standards. Other components of the BEST project include areas such as training for the textiles and garments sector, and informing workers about labor law enforcement.

Technical Vocational Education and Training

This project seeks to improve skills across industries. The focus is on the agro-processing and leather-processing industries. Training is driven by the needs of the private sector, but they are working with the GOB to build a model of levels of certification. The goal is to create marketable certifications that will allow the project to sustain itself after EU funding is phased out.

Bangladesh Investment Climate Fund

Managed by the IFC and co-financed by DFID, the BICF provides advisory services to improve the business environment, including the regulatory environment (registration of firms and changes to the tax regime).

INSPIRED

The INSPIRED project focuses on SME policy issues. The EU intends to strengthen SME business associations and develop products and services for financing. But it does not provide direct loans. No specific industries have been targeted yet.

WTO AND OECD

Aid for Trade Initiative

Aid for Trade promotes the role that trade can play in economic development to both developing country governments and donors. Developing countries identify the constraints to increasing trade and the initiative helps to mobilize donor resources to address those constraints.

The aid provided can come in a variety of forms including:

- Technical assistance to help develop trade strategies or improve trade negotiation skills,
- Infrastructural improvements like new roads, ports or new telecommunications equipment,
- Productive capacity building through investments in industries and sectors that help diversify exports and build on comparative advantages,
- Adjustment assistance that helps mitigate the cost of tariff reductions or declining terms of trade.

WTO: The WTO does not provide development assistance. Instead the WTO works to ensure that the donor agencies involved in Aid for Trade understand the trade needs of WTO Members, and to coordinate international aid policy.

OECD: The OECD works to make aid for trade more effective by improving donor coordination in the design, delivery and evaluation of aid for trade. It is concerned with maximizing the effectiveness of aid and promoting coherence between donors and partner countries.

UNCTAD

Investment Policy Review (IPR)

UNCTAD launched the investment policy review, requested by the Government of Bangladesh, in March of 2012 and expects it to be completed about a year later. IPRs focus on evaluating the legal, regulatory and institutional framework regarding FDI and provide recommendations on how best to utilize FDI for development. Countries that implement the recommendations from their IPR usually see an increase in FDI inflows, which has been linked to stable long term growth in developing countries.

WORLD BANK

Enhanced Integrated Framework for Technical Assistance to LDCs

Under the Enhanced Integrated Framework for Technical Assistance to Least-developed Countries (a multi-donor activity supported by the IMF, World Bank, WTO, International Trade Centre, UNCTAD, and UNDP), the World Bank is taking the lead in conducting a diagnostic trade and integration study for Bangladesh. Field missions were conducted in 2012, and a full assessment of binding constraints to Bangladesh's export growth and diversification will be released in 2013, after Bangladeshi stakeholders from government as well as the private sector have had an opportunity to consider and validate recommendations proposed in an initial draft report.

DONOR MATRIX EXPORT VC DEVELOPMENT
DFID • The Katalyst project has provided extension services to jute and vegetable farmers and worked on standards compliance and improving exports of fish and shrimp. • The Making Markets work for the Poor project hopes to correct market failures through instruments such as contract farming and improved access to credit. • The South Asia Enterprise Development Facility will promote saline and drought tolerant seeds.
EU • The Technical Educational and Vocational Training program hopes to create marketable certifications for workers in the agro processing industry.
USAID • The Feed the Future Aquaculture project provides extension services, superior inputs and aims to improve aquaculture regulation and policy. • The Poverty Reduction by Increasing Competitiveness of Enterprises project focuses on improving the competitiveness in the aquaculture and horticulture industries by building skills and identifying market opportunities. • The Agricultural Value Chain project will using a market-systems approach to achieve sustainable economic growth that will address common constraints across multiple value chains. • The Agricultural Extension Capacity Building Activity aims to improve the quality and outreach of agricultural extension services for a wide variety of high value crops. • The Agricultural Inputs project will improve the market for agricultural inputs by building forward and backward linkages between input producers, importers, wholesalers and retailers.

CROSS CUTTING
ADB • The ADB is working on improving farm to market infrastructure like roads, boat loading points, warehouses and trading points. It is also completing a feasibility study on Mongla port prior to making any investments there.
EU • The Trade Policy Support Programme works to improve trade policy and build capacity for the negotiation and implementation of trade agreements.
WTO & OECD • The Aid for Trade program can help countries develop trade strategies and improve trade negotiation skills.
UNCTAD • Bangladesh's Investment Policy Review is expected to be completed in the spring of 2013. Potential future reforms in FDI policy could lead to increased inflows that might go toward projects in air cargo infrastructure or mobile telephony.
World Bank • World Bank is currently conducting a diagnostic trade and integration study which will give a full assessment of binding constraints to Bangladesh's export growth and diversification.
BANGLADESH-INDIA CROSS BORDER TRADE DEVELOPMENT
ADB • ADB has been focused on improving regional trade linkages, investing in rail and road projects and is implementing a regional project on customs harmonization. It has also invested in facilities at Benapole, but none at Petrapole.
EU • The Better Work and Standards program contains a component (Better Fisheries Quality) that aims to improve testing and standards for fish and shrimp production.
WTO & OECD • Aid for Trade can help direct aid towards infrastructure improvements to facilitate increased trade.

ANNEX 8: MEETINGS

August 29 (Dhaka)

National Board of Revenue
Secretary: Dr. Nasiruddin Ahmed
Member: Nasir Uddin

Land Port Authority
Chairman: AKM Yahea Chowdhury
Member (Admin and & Finance): Md. Akbor Hossain

Export Processing Zone Authority
Member: AKM Mahbubur Rahman
Joint Secretary: Sayed Nurul Islam
Asst Manager: Md. Whaheduzzaman

August 30 (Dhaka)

Ministry of Commerce
Secretary: Ghulam Hussain

Ministry of Shipping
Secretary: Abdul Mannan Howlader

Ministry of Fisheries and Livestock
Secretary: Ujjwal Bikash Dutta

Ministry of Agriculture
Secretary: Monzur Hossain

August 31 (Dhaka)

Agora Retail Outlet
Store Manager: Ashraful Islam

September 2 (Benapole and Jessore)

Benapole Port Authority
Secretary: Abdul Mannan Howlader

Benapole Customs
Commissioner of Customs: Masud Sadiq

Benapole Freight Forwarders
Various

Deputy Commissioner, Jessore
Deputy Commissioner & District Magistrate: Mustafizur Rahman

Bangladesh Flower Society President: Abdur Rahim

Abu Saleh Seeds & Agro Enterprise
Proprietor: Yousuf Ali

Hortex Floriculture Officer
Jicorgacha Upazila (sub-district) Officer: Mr. Ershadul

September 3 (Khulna and Mongla)

Department of Fisheries, Khulna
Deputy Director: Raqib Uddin Biswas

Mongla Export Processing Zone
General Manager: Md. Hafizur Rahman
Assistant Manager: Md. Whaheduzzaman

Mongla Port Authority
Chairman: Commodore MAK Azad
Joint Secretary: Altaf Hossain

Mongla Customs

September 4 (Khulna)

Bangladesh Standards and Testing Institution, Khulna
Office Head: Abdul Wadi

Khulna Transport Association and Trucker's Union
Gaffar Biswas

Bangladesh Frozen Foods Exporters Association
Director: S. Humayun Kabir

Khulna Deputy Commissioner
Deputy Commissioner: Jamsher Ahmed Khandker

Bhomra Clearing and Forwarding Agents
S.M. Humayun Kabir

September 5 (Khulna)

Shrimp Farm

Shrimp Collection Depot

Mostafa Organic Shrimp Products Ltd. – Processing Plant
General Manager: Md. Abdul Monayem

Demo Farm, Ministry of Fisheries & Livestock

Natural Fibres Coconut Coir Factory
Proprietor: Mostafiz Ahmed

USAID Funded Prawn Farm (WorldFish/PRICE)
WorldFish representative: Mr. Kabir

Akij Jute Mill
Chairman (by phone): Sk. Nasir Uddin
Manager: Iftakher Hossain

September 6 (Khulna and Bhomra)

Winrock/Katalyst Hatchery, Demo Farm & Processor
Market Coordinator, Prawn: Habibur Rahman Khondaker
BDS Coordinator, Prawn: Md. Nurul Alam

Women's Shrimp Farmer Group

Bhomra Freight Forwarders
President, C&F Association, Bhomra: Mr. N.U. Ahmed

Bhomra Customs
Md. Al-Amin

Ghojadanga Clearing and Forwarding Association
Secretary: Parimol Ray

Truck Drivers
Bangladeshi Driver: Mizahurrahman

September 8 (Dhaka and Jessore)

Bangladesh Shrimp & Fish Foundation (Dhaka)
Chairperson: Syed Mahmudul Huq
Executive Director: Mahmudul Karim
Professor of Economics: Farid Uddin Ahmed

Creation Coir Factory (Jessore)
Mr. Lento

Truck Owners Association (Jessore)
Mr. Shapon

Flower Farmers (Jessore)
President, Bangladesh Flower Society: Mr. Md. Abdur Rahim

September 9 (Dhaka and Jessore)

World Fish (Dhaka)
Director: William Collis
Project Manager: Quazi AZM Kudrat-E-Kabir

PRICE (Dhaka)
Chief of Party: Alexis Ellicott
Team Leader: A. B. Siddiqui

IFDC (Dhaka)

PRAN (Dhaka)
Deputy Managing Director: Ahsan Khan Chowdhury
Chief of Export: Md. Mizanur Rahman

Fish Farmers (Jessore)
Department of Fisheries, Jessore: Md. Ramjan Ali
Fish Farmer: MD Tutul

Horticulture Farmers (Jessore)

September 10 (Dhaka)

AGORA
Group Director: Niaz Rahim
DGM & Head of Supply Chain: Md. Nizam Chowdhury

Ministry of Agriculture
Secretary: Monzur Hossain

Hortex Foundation
Managing Director, Hortex Foundation: S.M. Monowar Hossain
Assistant General Manager: Mitul K. Saha
Assistant General Manager: Md. Rafiqul Islam

DFID
Private Sector Advisor: Syeda Masarrat Quader

ADB
Principal Country Economist: Mohammad Zahid Hossain

Ministry of Railways
Director General: Engr. Abu Taher
Additional Director General (Rolling Stock): Khalilur Rahman
Additional Director General (Infrastructure): Amzad Hossain

September 11 (Dhaka)

Board of Investment
Director: Tauhidur Rahman Khan
Executive Member: Ahmad Nasiruddin Mahmood
Joint Secretary: Khairul Anam
Additional Secretary: Nabhash Chandra Mandal

September 12 (Dhaka)

BIID
CEO: Md. Shahid Uddin Akbar

Kazi Farms
Director: Kazi Zeeshan Hasan

Indian High Commission
First Secretary: B. Shyam

BRAC Bank Ltd.
Head of SME Banking: Abdur Rahman
Head of New Business: Siddique Bin Zia

European Union
Senior Programme Officer: Rubayat Jesmin

September 13 (Dhaka)

Biman
General Manager Cargo: Mohd. Ali Ahsan
Director Marketing & Sales: Mohammad Shah Newaz
Manager Commercial: Iftekhar H. Chowdhury

Katalyst
General Manager: Goetz Ebbecke

Golden Harvest
Managing Director: Rajeeb Samdani
Chief Operating Officer: Mohius Samad Choudhury

Bangladesh Frozen Fruits Vegetables & Allied Products Exporters Association
President: S.M. Jahangir Hossain
Advisor: Monjurul Islam
Exporter: Khaledur Rahman

Creation Private Ltd.
Managing Director: Md. Rashedul Karim

ANNEX 9: BIBLIOGRAPHY

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