

The cold chain:

As global economy inflates, Bangladesh can boost exports of its agro-products

Since adopting favorable trade policies in the recent decade, Bangladesh has made tremendous strides in bolstering commercial trade operations. The nation has experienced a cumulative export growth of 67% in the past decade (all products accounted).¹ However, the country's rapid development and population growth has required significant imports to sustain economic momentum, often of critical raw materials such as fuel and iron, causing the country to fall in a trade deficit.

The country's trade deficit in the past decade widened from USD 15.3 billion in 2011 to USD 23.8 billion in 2020 (Table-1),² of which 47% consisted of agricultural products (USD 11.2 billion).³ The majority of these imports come primarily from India, Russia, and Ukraine.^{4 5} The trade deficit with India alone is of USD 14 billion.⁶

While a country cannot completely eradicate its import need, its balance of trade can be optimized to foster stability and economic opportunities. Bangladesh could in fact increase its domestic agricultural production by making more efficient use of its arable land, reducing post-harvest loss, and increasing yields through technology and innovative farming practices. This in turn would supply a bigger portion of the local demand, decreasing the need for imported food products.



Cargo ship transporting containers

Cambodia is a good example of a country that has been able to substantially decrease its trade deficit.⁷ Partially due to its ASEAN membership and close ties with major trading partners, Cambodia was able to reduce its trade deficit by almost 24% from January 2022 to June 2022. Given its geographic location and increasingly close bilateral ties with ASEAN countries, a substantial trade deficit decrease is achievable for Bangladesh as well.⁸ The rise of ready-made garment exports demonstrates that improving the logistics and trade prospects of Bangladesh is possible and replicable across other sectors, such as the trade of food products.

Year	Bangladesh net trade balance (USD billions)
2011	-15.3
2012	-12.9
2013	-12.6
2014	-16.5
2015	-15.4
2016	-15.5
2017	-23.0
2018	-27.5
2019	-25.9
2020	-23.8

Source: World Trade Organization. "Graduating from status of least-developed country (LDC)" 2020. World Trade Organization.

Table 1: Bangladesh net trade balance 2011-2020

¹ World Bank. Accessed 11 October 2022. <https://data.worldbank.org/indicator/NE.EXP.GNFS.CD?locations=BD>

² World Bank. Accessed 11 October 2022. <https://data.worldbank.org/indicator/NE.EXP.GNFS.CD?locations=BD>

³ FAOSTAT. Accessed 13 October 2022. <https://www.fao.org/faostat/en/#data/TCL>

⁴ FAOSTAT. Accessed 13 October 2022. <https://www.fao.org/faostat/en/#data/TCL>

⁵ DW "India, Bangladesh begin talks on economic partnership". Accessed 23 September 2022. <https://www.dw.com/en/india-bangladesh-begin-talks-on-economic-partnership/a-63029811>

⁶ Dewan, Neha. "Trade pact with Bangladesh can boost India's exports by \$17 billion". The Economic Times. Accessed 13 October 2022.

<https://m.economictimes.com/small-biz/trade/exports/insights/trade-pact-with-bangladesh-can-boost-indias-exports-by-17-billion/articleshow/94044991.cms>

⁷ Kang Sothear. "Cambodia commodity trade deficit down to \$3.64 billion." Khmer Times. June 2022.

<https://www.khmertimeskh.com/501102129/cambodia-commodity-trade-deficit-down-to-3-64-billion/>.

⁸ Trading Economics. Balance of Trade: Asia. Accessed 2022. <https://tradingeconomics.com/country-list/balance-of-trade?continent=asia>.

A key limitation against growing the export of domestically produced agro-products is the spoilage that occurs after harvest, also known as post-harvest loss (PHL). While onions are a key commodity in Bangladesh, the average Bangladeshi onion producer will lose 40% of their harvest to preventable wasting. In 2020 alone, this caused the spoilage of 782,000 metric tons (MT) of onions, amounting to USD 198 million in total loss.⁹ In the same year, Bangladesh imported USD 172 million worth of onions (primarily from India).¹⁰ Proper cold chain infrastructure can help Bangladeshi producers harness their produce and significantly decrease PHL to less than 10%. *“With proper cold chain controls in place, the freshness of fruits and vegetables is increased from 2 days to over 20 days,”* noted Greg Laurin, a global supporter of lowering food waste and president of Conestoga, a major Canadian cold chain provider. In Laurin’s experience working with Nigerian company ColdHubs, a company that installs and manages walk-in, solar powered cold rooms, the company reported to have stored over 50,000 tonnes of food that would have otherwise gone to waste in 2021 alone. Investing in temperature-controlled infrastructure reduces PHL, thus lessening the demand for agricultural imports, increasing the availability of local products, and in parallel opening an opportunity toward increasing exports.

Multiple local agricultural products in Bangladesh have high export potential, including fruits/vegetables and aquaculture products.¹¹ ¹² Tomato production in Bangladesh has grown significantly due to new seeds and improved technology allowing them to be produced outside of the normal growing season.¹³ Tomato production grew by almost 16% from 2014 to 2020, reaching 416,000 tons.¹⁴ Low-cost cooling systems for tomatoes and other fruits/vegetables help to maintain the value and shelf-life of these products as domestic production increases. Additionally, the success of Vannamei shrimp variety trials for high-volume aquaculture production can have tremendous positive implications for the nation's seafood industry and can supplement the export of black tiger shrimp. Government support for increased Vannamei production would allow producers to capture international demand for multiple varieties of shrimp products, stimulating exports and increasing revenue for the aquaculture sector of Bangladesh.

Increasing production is only half the battle; the other half is building logistics ecosystems that can support the supply chain and further provide the country with the capacity to trade at international standards. Although turnaround time and containers handled per vessel have recently improved at Chattogram Port, its overall performance is still below the global standard, largely due to poor onward connection, high dwell time for containers (including reefer containers¹⁵), restrictions that prohibit inland container depots (ICD) from handling most perishable products as well as delays during custom checks.¹⁶ To make up for the resulting product losses, traders are forced to account for much higher product volumes than will ultimately be sold. To reduce these losses, a state-of-the-art cold chain facility in or around Chattogram Port is needed.

A temperature-controlled facility in and near the port, specially at an ICD, would reduce congestion at the port, open space for other containers, allow customs officials to conduct checks under the appropriate temperature-conditions without harming the product, and allow traders to do their business more effectively and efficiently. Danie Kaplan, who represents a major US cold chain service company and is chairman of the Global Cold Chain Foundation, states that *“successful penetration into world markets requires consistent maintenance of the cold chain beginning with pre-cooling near the point of harvest and continuing uninterrupted to the point of ultimate consumption.”* Because there is not a full-service cold chain provider with a state-of-the-art facility at any major Bangladeshi trading hub, investing in the cold chain inside and near air and seaports (like in private inland container depots) would boost efficiency and profitability for traders, customs, and port operators.

⁹ FAOSTAT. Accessed 14 September 2021 <https://www.fao.org/faostat/en/#home>

¹⁰ LixCap market study 2021.

¹¹ Innovision. “Study on the Roles and Opportunities for Private Sector in Agro-food Processing Industry of Bangladesh.” Innovision. 2016.

¹² Innovision. “Study on the Roles and Opportunities for Private Sector in Agro-food Processing Industry of Bangladesh.” Innovision. 2016.

¹³ Innovision. “Study on the Roles and Opportunities for Private Sector in Agro-food Processing Industry of Bangladesh.” Innovision. 2016.

¹⁴ “Bangladesh: Tomatoes, production quantity (tons)”, accessed 21 April 2023,

<https://www.tilasto.com/en/topic/geography-and-agriculture/crop/tomatoes/tomatoes-production-quantity/bangladesh>.

¹⁵ Reefer containers are modules for goods that need to be under temperature-controlled environments during shipping. These are equipped with a refrigeration unit that is connected to the power on the ship or in a port.

¹⁶ Sukanta Sen and Md Akramuzzaman Shaikh, “Port Efficiency and Supply Chain: Implication for Bangladesh”, International Journal of Engineering and Management Research, December 2020.



Systematic changes to the trade operations are needed to reap the benefits of infrastructural improvements. To that end, the government of Bangladesh has been proactive in signing the WTO's Trade Facilitation Agreement (TFA).¹⁷ ¹⁸ Provisions in the TFA will enhance commerce. The Single Window¹⁹ system the government has been working to set up is one of the many advancements. Additional improvements include incorporating a risk management system for customs through algorithms that rank shipments to see which ones are at-risk and need to be checked by customs. These system changes are meant to reduce inspections, quicken product release, and position Bangladesh to succeed in becoming a key player in regional and international trade.

¹⁷ Fuad, Mubtasim. "Onion import, production both surging." The Business Post. 12 Jan 2022.
<https://businesspostbd.com/front/2022-01-12/onion-import-production-both-surging>

¹⁸ Reefer containers are modules for goods that need to be under temperature-controlled environments during shipping. These are equipped with a refrigeration unit that is connected to the power on the ship or in a port.

¹⁹ Sukanta Sen and Md Akramuzzaman Shaikh, "Port Efficiency and Supply Chain: Implication for Bangladesh", International Journal of Engineering and Management Research, December 2020.

The Bangladesh Trade Facilitation project aims to expand cross-border trade in agricultural goods and food products. The objective is to address systemic constraints at Bangladeshi ports; simplify and automate import and export processes; improve the capacity of Government regulatory agencies, laboratories, and warehouses; and to foster investment in cold storage facilities and temperature-controlled logistics.

Implementing Organizations



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