Advancing Mango Production & Forward Marketing in Bangladesh

From Local Gardens to Global Markets

SAF Sustainable Agriculture Foundation

LightCastle PARTNERS

HSBC

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Abbreviations

APEDA	Agricultural & Processed Food Products Export Development Authority
B2B	Business to Business
BADC	Bangladesh Agricultural Development Corporation
BAPA	Bangladesh Agro-Processors' Association
BARI	Bangladesh Agricultural Research Institute
BBS	Bangladesh Bureau of Statistics
BDT	Bangladeshi Taka
BFVAPE	Bangladesh Fruits, Vegetables & Allied Products Exporters' Association
BIN	Business Identification Number
BINA	Bangladesh Institute of Nuclear Agriculture
BSTI	Bangladesh Standards and Testing Institution
CCI&E	Chamber of Commerce, Industry & Exports
CPH	Central Packing House
CRAAB	Climate Resilient Agricultural Advancement in Barind
DAE	Department of Agricultural Extension
DAM	Department of Agricultural Marketing
EDS	Explosive Detection System
EMAP	Exportable Mango Production Project
EPB	Export Promotion Bureau
ERC	Export Registration Certificate
EU	European Union
FAO	Food and Agriculture Organization
FY	Fiscal Year
GAP	Good Agricultural Practices
GI	Geographical Indication
HWT	Hot Water Treatment
ICT	Information and Communication Technology
ITVER	Instituto Tecnologico de Veracruz
KII	Key Informant Interview
LCP	LightCastle Partners
MoA	Ministry of Agriculture
MOC	Ministry of Commerce
MOCI	Ministry of Commerce and Industry
MoF	Ministry of Finance
MoFA	Ministry of Foreign Affairs

NBR	National Board of Revenue
PC	Phytosanitary Certificate
PPP	Public-Private Partnership
PQW	Plant Quarantine Wing
PSP	Private Sector Players
REX	Registered Exporter
RMG	Readymade Garments
SAF	Sustainable Agriculture Foundation
SAU	Sher-e-Bangla Agricultural University
SP	Service Provider
TIN	Taxpayer Identification Number
TMGA	Thai Mango Growers' Association
UAO	Upazila Agricultural Officer
UHD	Ultra High Density
UHDP	Ultra-High-Density Plantation
UK	United Kingdom
UN	United Nations
USA	United States of America
USD	United States Dollar
USP	Unique Selling Point
VAT	Value Added Tax
VHT	Vapor Heat Treatment

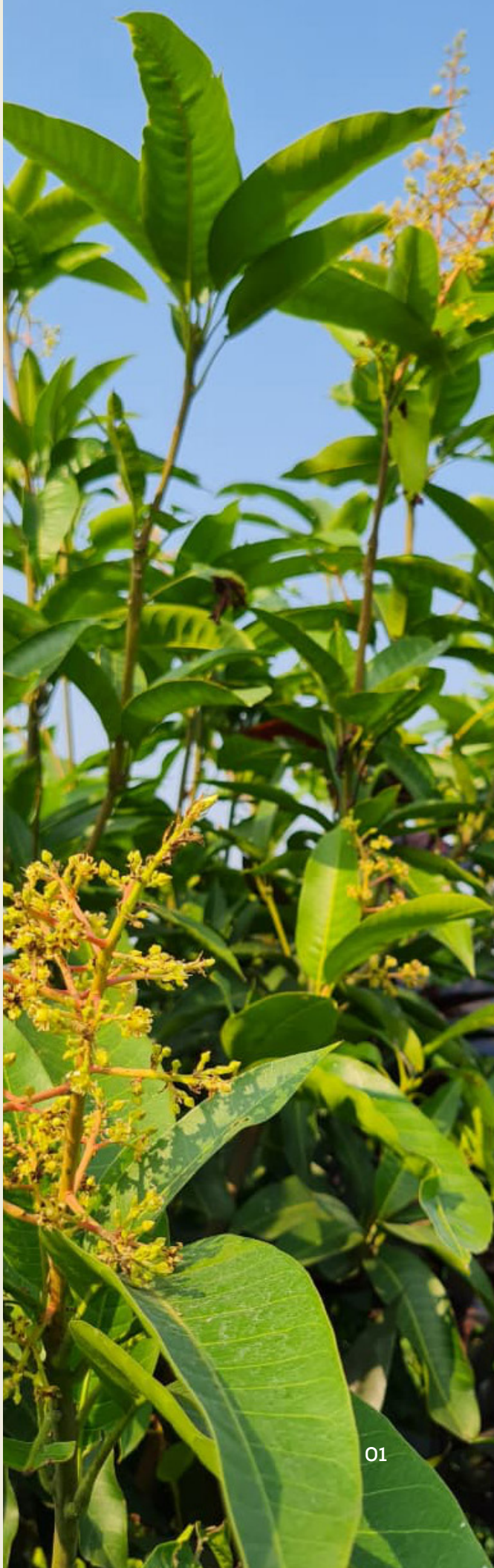
Table of Contents

About CRAAB Project

The Climate Resilient Agricultural Advancement in Barind (CRAAB) project, supported by a philanthropic grant from HSBC Bangladesh and implemented by the Sustainable Agriculture Foundation Bangladesh (SAF Bangladesh) with DASCOH Foundation as co-implementer, empowers farmers in the Barind region to adopt climate-smart practices that address water scarcity, boost productivity, and build resilience. One of the core focuses has been on **Ultra-High-Density (UHD) Mango Plantation with drip irrigation**, which enables farmers to double yields on the same land, achieve faster fruiting, and improve profitability. UHD trees are easier to manage, require less water, and produce export-quality fruits, enhancing both climate and market resilience. This new gardening initiative will also contribute to offsetting CO2, and the project will create access to carbon finance for these farmers through carbon credit registration on the Verra platform.

Building on the CRAAB project's constant drive to strengthen productivity, this report, "Advancing Mango Production and Forward Marketing in Bangladesh," has been undertaken to map out the barriers and opportunities within the forward market of mango value chain in Bangladesh, facilitating its seamless integration into global markets. By identifying systemic challenges in export logistics, quality standards, and value chain coordination, this **study seeks to unlock Bangladesh's mango export potential and integrate local producers into global supply networks.**

Together, these efforts embody a shared aspiration: to transform the mango sector into a climate-resilient, market-driven ecosystem, one where innovation in production seamlessly aligns with opportunities in the forward market, **securing a prosperous future for Bangladesh's growing agro economy.**



Message from HSBC

The Climate Resilient Agricultural Advancement in Barind (CRAAB), project is part of HSBC's philanthropic support to advancing climate resilience and improving the livelihoods of communities in vulnerable regions. In partnership with Sustainable Agriculture Foundation (SAF) and guided by HSBC's Global Philanthropy Strategy, CRAAB aims to contribute to our global priority areas of Nature, Developing Resilience, and Climate Innovation.

Operating in 57 markets, HSBC works with partners around the world to deliver community investments that address local needs while aligning with global environmental priorities. CRAAB is one such initiative supporting farmers in a climate-vulnerable region to adopt efficient, sustainable practices such as Ultra-High-Density (UHD) mango cultivation with drip irrigation. These interventions enhance productivity, improve fruit quality, reduce pressure on groundwater, and create opportunities.

Bangladesh is among the top mango-producing countries in the world, known for its exceptional varieties, rich taste, and substantial production volume. With the right support systems and market linkages, mangoes can play a meaningful role in export diversification, foreign currency earnings, and rural income generation.

This report, Advancing Mango Production and Forward Marketing in Bangladesh, draws on insights emerging from CRAAB and examines the opportunities and challenges across the forward market. By identifying gaps in export logistics, quality standards, traceability, and value chain coordination, the study outlines how Bangladesh can strengthen its position in global markets.

At HSBC, we believe in collaborative efforts towards impact creation and this report reflects the combined strengths - HSBC Bangladesh, providing philanthropic support to advance climate resilience and community development; the Sustainable Agriculture Foundation (SAF), leading implementation and farmer engagement on the ground; and Lightcastle Partners, contributing research expertise and market analysis to inform strategic pathways for a more competitive and climate-resilient mango sector.

Syeda Afzalun Nessa

Head of Sustainability,
HSBC Bangladesh

HSBC

Message from SAF Bangladesh

Bangladesh stands at a pivotal moment in its agricultural development. Mangoes, one of the world's most sought-after tropical fruits, present a unique opportunity to diversify exports, strengthen rural livelihoods, and elevate the nation's presence in global markets. While Bangladesh produces over 2 million tons annually—ranking 8th globally—less than 0.05 percent reaches international markets. This gap reflects both a challenge and a remarkable opportunity for strategic intervention.

The study Advancing Mango Production and Forward Marketing in Bangladesh, conducted by LightCastle Partners under the Climate Resilient Agricultural Advancement in Barind (CRAAB) Project, philanthropically supported by HSBC Bangladesh, offers evidence-based insights to unlock this potential. It identifies critical barriers, including limited post-harvest treatment and cold chain infrastructure, certification constraints, and gaps in market intelligence and branding. Importantly, it provides actionable recommendations to strengthen coordination, improve market systems, and enable farmers and exporters to compete effectively in international markets.

We extend our sincere gratitude to HSBC Bangladesh for their visionary support, to DASCOH Foundation for their dedicated field engagement, and to LightCastle Partners for their analytical rigor. We also thank the Department of Agricultural Marketing (DAM), Bangladesh Agricultural Research Institute (BARI), the Department of Agricultural Extension (DAE), exporters, farmers, and all stakeholders whose contributions enriched this study.

Realizing the full potential of Bangladesh's mango sector will require partnership, innovation, and investment. We invite policymakers, industry actors, development partners, and donors to collaborate in addressing structural gaps, scaling infrastructure, and supporting farmers and exporters. By working together, we can transform mango production into a globally competitive, inclusive, and high-value sector, generating sustainable economic growth and improving livelihoods across the country.

Md Farhad Zamil

Executive Director,
Sustainable Agriculture Foundation
Bangladesh (SAF Bangladesh)

SAF Sustainable Agriculture Foundation

Message from LightCastle Partners

Persistent challenges in Bangladesh's agricultural export landscape, including high freight costs, stringent certifications, and varying market compliance requirements, continue to test the competitiveness of our mango value chain. Coupled with global inflation and logistical pressures, these issues have shaped a cautious outlook among exporters. Yet, strong production levels and renewed export momentum signal optimism for the season ahead.

Bangladesh has marked a promising start toward the target of 4,000 tonnes in 2025. The United Kingdom, particularly England, is expected to remain the largest destination. Recent trends reflect both progress and opportunity. The widening market footprint underscores increasing global acceptance of Bangladeshi mangoes. Stakeholders remain confident that improved compliance capacity, strengthened institutional support, and streamlined supply-chain processes will further enhance export readiness.

We are grateful to the producers, exporters, agricultural officials, and government officials whose continued efforts are strengthening Bangladesh's presence in the global mango market. We invite you to explore the full breadth of insights in this report.

Together, we must continue to upgrade post-harvest systems, expand market access, and invest in innovation across the value chain, fueling a more competitive, resilient, and globally recognized mango export sector.

Zahedul Amin

Co-Founder & Managing Director,
LightCastle Partners

LightCastle
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Executive Summary

Bangladesh has achieved remarkable export growth over the years, primarily driven by its Ready-Made Garments (RMG) sector. However, with LDC graduation on the horizon and shifting global trade dynamics, diversification has become an urgent priority. Agriculture, and particularly mangoes, offers a strong opportunity. As one of the world's most popular tropical fruits, mango has a global import demand of around **2.4 million tons annually**, largely supplied by Asia. While Mexico, Thailand, and Brazil lead global exports, Bangladesh is the **8th largest producer** with over **2 million tons annually**, yet exports account for less than **0.05 percent** of production, showing how much potential remains untapped.

Despite this gap, recent signs of progress are promising. Mango exports reached **USD 284,135 by May FY25**, surpassing previous years. Beyond traditional diaspora-heavy markets in Europe and the Middle East, Bangladesh has begun entering emerging destinations, including China, now the second-largest importer globally. These steps highlight the country's potential to scale exports if systemic bottlenecks are addressed.

Key Opportunities and Gaps

- **Quality & Certification:** Export markets increasingly require **Global GAP certification**, but currently only one Bangladeshi entity is certified. Scaling farmer capacity and certification access is critical.
- **Post-Harvest Infrastructure:** Mangoes require **Hot Water Treatment (HWT)** or **Vapor Heat Treatment (VHT)** to maintain quality and meet import standards. Bangladesh has just **5 HWT facilities** and no VHT units, limiting export readiness. Cold chain gaps further compromise shelf life and competitiveness.
- **Market Branding & Intelligence:** Bangladesh needs to strengthen its **mango brand globally**, supported by technology-driven market

intelligence, targeted promotion, and public-private collaboration.

» **Policy Push:** Initiatives such as the **Exportable Mango Production Project** of the government signal progress, but scaling requires integrating lessons from peers like India, Pakistan, and Thailand.

Bangladesh is now at a crossroads. Nearing 2026, with LDC graduation approaching, mangoes represent not just a niche product but a **strategic diversification pathway** for the country's export basket. By focusing on **quality, infrastructure, certification, and branding**, Bangladesh can accelerate mango exports, enhance farmer incomes, and build resilience beyond garments.

In short, Bangladesh has the production strength, global demand exists, and the timing is right—the challenge is aligning infrastructure, certification, and market strategies to translate this potential into a globally competitive mango export sector.

01

Mango Outlook

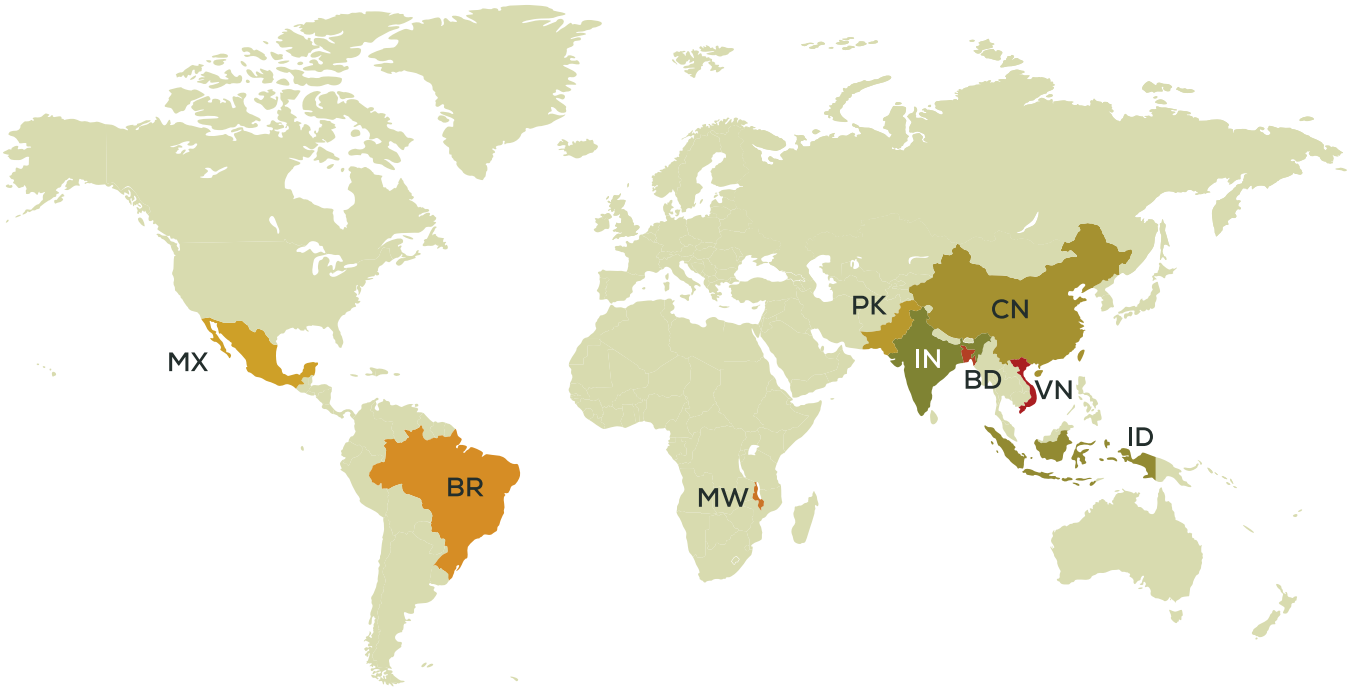
1.1

Global Outlook of Mango

Renowned for its rich flavor, sweet aroma, and high nutritional value, Mango is one of the most widely produced tropical fruits of the world, with India being the largest producer, about **26.3 million tons production in 2022**[1], and Asia having a strong production dominance, accounting for more than 70 per cent[2] of the global share and producing a range of varieties of the fruit.

FIGURE 1

Leading Mango Producers in the World in 2022



IN	India 26.3M	ID	Indonesia 4.1M	CN	China 3.8M
PK	Pakistan 2.8M	MX	Mexico 2.5M	BR	Brazil 2.1M
MW	Malawi 1.9M	BD	Bangladesh 1.5M	VN	Vietnam 1.4M

Source: World Population Review, 2022

With a rich set of mango varieties produced worldwide, some have been successful in attracting the global market, traveling across continents to meet the global demand. The varieties with high global demand originate and are exported mainly from South Asia and Latin America, primarily reaching the plates and the palates of North America and Europe.

TABLE 1

Global Mango Varieties: Origins and Export Destinations

HIGH-DEMAND MANGO VARIETY	ORIGIN	KEY EXPORT DESTINATION
 **Alphonso**	India	USA
 **Kesar**	India	China, USA, UK
 **Nam Dok Mai**	Thailand	Korea, Japan, Vietnam, China, Malaysia, EU
 **Kent**	**Latin America:** Peru, Mexico, Brazil **West Africa:** Côte d'Ivoire, Senegal, Mali, Burkina Faso, Guinea Spain	European Union
 **Keitt**	**West Africa:** Côte d'Ivoire, Senegal, Guinea **Latin America:** Brazil, Dominican Republic, Puerto Rico Spain	European Union
 **Palmar**	Brazil	European Union
 **Tommy Atkins**	Brazil, Spain	European Union

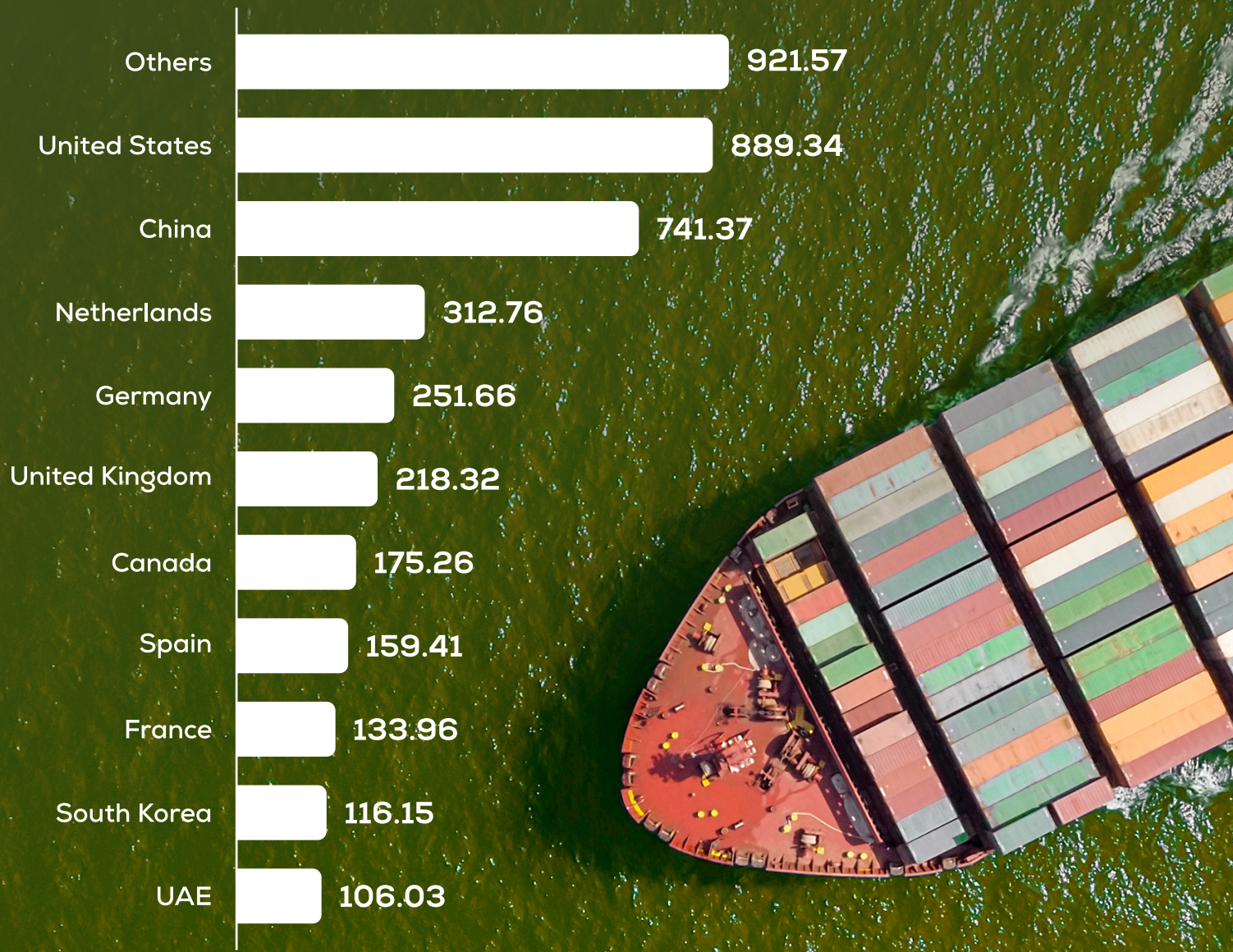
1.2

Growing Global Market

While North America and Europe are two of the key regions importing mango varieties, the long list of the **overall USD 4.03 billion mango importing market** also includes Asian countries like China, Korea, and Japan, and Middle Eastern countries like the UAE and Saudi Arabia, with prevalent migrant communities, further enhancing the import demand.

FIGURE 2

Top Importing Countries of Mango in 2023[3] (Million USD)

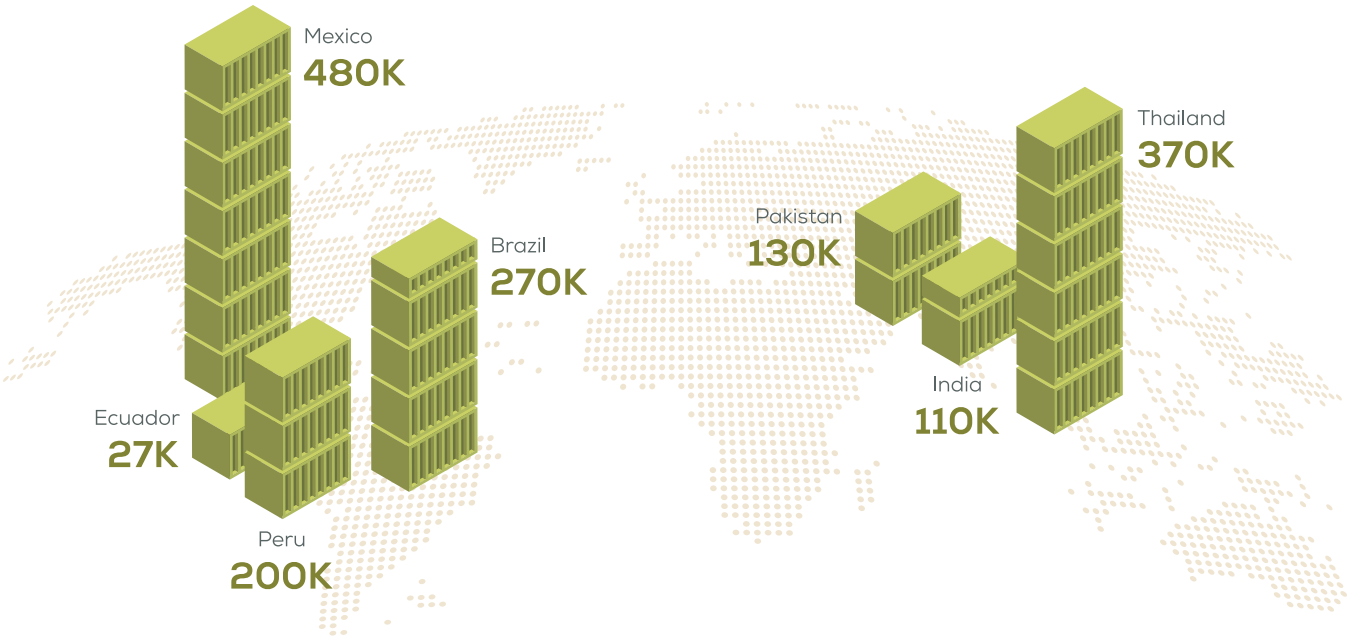


To meet the rising demand from importers, the key production hubs have been competing to secure their spots in the global market as leading exporters, where, in addition to taste and production capacity, many other factors come into play in the broader game of the global value chain; factors such as adherence to the global good agricultural practices (GAP) standards, leveraging technology to enhance quality of the fruit, treatment of harvested fruits and the shelf life of fruits.

In 2023, global exports of mangoes, mangosteens, and guavas reached 2.4 million tons, marking a 5.2 per cent increase from the previous year[4]. **Mangoes continued to dominate this category, accounting for approximately 85 per cent of total exports.** This growth in mango exports was primarily driven by increased shipments from Mexico and Brazil, where the overall growth was shaped by regional production dynamics, shifting consumer preferences, and weather-related disruptions.

FIGURE 3

Exports of Mango, Mangosteen, and Guava by Country (Tonnes), 2023



Source: FAOSTAT Data, 2023

TABLE 2

International Pricing Structure of Mango Export of the Peer Economies (September, 2025)[A]

PLACE	CHANNEL	VARIETY	PACK & WEIGHT	RETAIL PRICE/KG (~)
London, UK	Red Rickshaw[5], Variety Foods[6], Alphonso Mango UK[7]	Indian Alphonso	Box ~2.6–3.0 kg (12 pcs)	GBP 8–10
New York or New Jersey, USA	Online ethnic grocers	Indian Alphonso	Box ~3 kg (10–12 pcs)	USD 15–18[8]
Paris, France	Online ethnic sellers	Pakistani Chaunsa	Box 1.1–1.3 kg (6–8 pcs)	EUR 14–21[9,10]
USA	Seasonal ethnic grocers	Pakistani Chaunsa	Box 2.5–3 kg (6–8 pcs)	USD 13–18[11]
USA	Seasonal online ethnic boutique grocer	Thai Nam Dok Mai	Box ~0.9–3.6 kg	USD 53–137[12]

A. The prices will vary depending on timeframe

1.2.1 // Strategic Leadership of Asian Countries

Innovation and Diversification Journey of Thailand

Looking into the export performance of the mango production hubs in Asia, Thailand, the second largest exporter of mango, mangosteens, and guava, presents the story of foresight and leveraging research and progressive practices to bring forth a collaborative growth for its mango producers. While the country has secured the 10th position in the mango production ranking, its export value in FY 24 (USD 133 million) exceeded India's by USD 77 million mango export value. The credit for such an achievement goes to its multi-faceted effort towards building and strengthening the export infrastructure by adopting modern cultivation and treatment facilities, including vapor heat treatment and irradiation, and developing a decentralized and controlled temperature supply chain and testing facilities through strategic placement, resulting in a tree to shelf timeline of 3 to 4 days. Over the past decade, the country has also been investing in research on enhancing the quality and exportability of mangoes and other processed mango products, placing many Thai mango varieties in a premium range, and creating markets for culturally significant processed products like mango sticky rice.

Adoption of Modern Technologies and Decentralization Driving Growth of India

Another key exporter from Asia and the largest mango producer, India exemplifies leveraging its popular varieties, and unique geographical positioning to serve both neighboring Asian markets and Middle Eastern markets. The country has also built a strong export-focused infrastructure to support the regional hubs in maintaining quality standards and experiencing a smooth decentralized supply chain with testing, treatment and packing facilities built along the production hubs. With gradual adoption of these progressive measures, India is strengthening its position in the global market with around USD 56 millions of fresh mango exports in FY24.

Learning from the experiences of its peers, Bangladesh is also picking up its pace to secure its place in the global export market, as a part of its export diversification efforts.

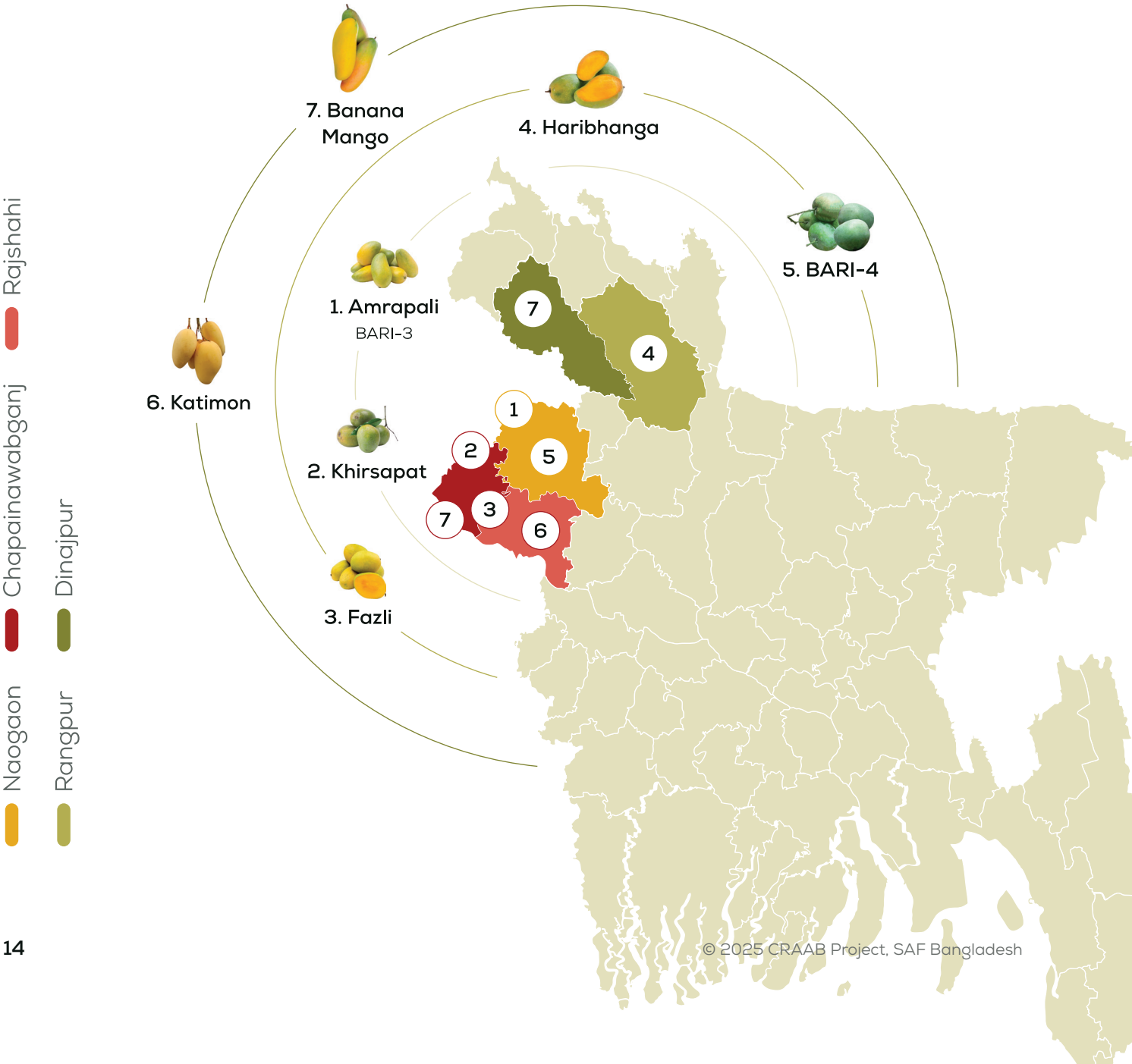
1.3

Current Outlook of Bangladeshi Mango

The eighth largest mango producer in the world, Bangladesh, produces over **2 million tons**[13] of mangoes across various regions, and commercially grows 31 varieties out of the 152 officially defined ones

FIGURE 4

Popular Mango Varieties and Regions in Bangladesh



TOP PERFORMING MANGO VARIETY FROM BANGLADESH	ATTRACTIVENESS
Amrapali	Longer shelf life
Khirsapat	GI-Product
Fazli	Long shelf life
Haribhanga	GI-Product
BARI-4	8-month production
Katimon	Year-round production
Banana Mango	Unique shape

In contrast to this impressive production capacity, the export performance of Bangladesh has yet to realize its full potential. In 2022, the country exported only **1,757 tons**[14] of mangoes by air. This reveals a stark disparity between production and export volumes, with **exports accounting for a mere 0.075 per cent of the total production.** In other words, over 99.9 per cent of the mangoes produced remained within the domestic market, reflecting a very low export-to-production ratio[15].

In FY24, the production was around **2.4 million tons**, but the country exported only **1,321 tons**, according to the Department of Agricultural Extension (DAE)[16]. This consistent mismatch between high production and low exports highlights the systemic barriers within the country's export ecosystem, and the need for enhanced export facilitation and logistics.

1.4

Bangladeshi Mangoes Crossing Borders

In terms of export value earned, Bangladesh exported mangoes of around USD 180,255 in FY24. While the export-production ratio is still at a lower level, Bangladeshi mangoes are attracting a wider group of consumers every year. Until May of FY25, the country had already earned **more than 1.5 times (USD 284,135)** than the previous year's total export earnings. With the ongoing harvesting season, this number is expected to significantly increase, further recovering from the effects of global supply chain disruptions caused in the past few years due to the COVID-19 pandemic and the Russia-Ukraine war.

FIGURE 5

Bangladesh's Export Earnings (in thousand USD) of Mango from FY14-FY25*

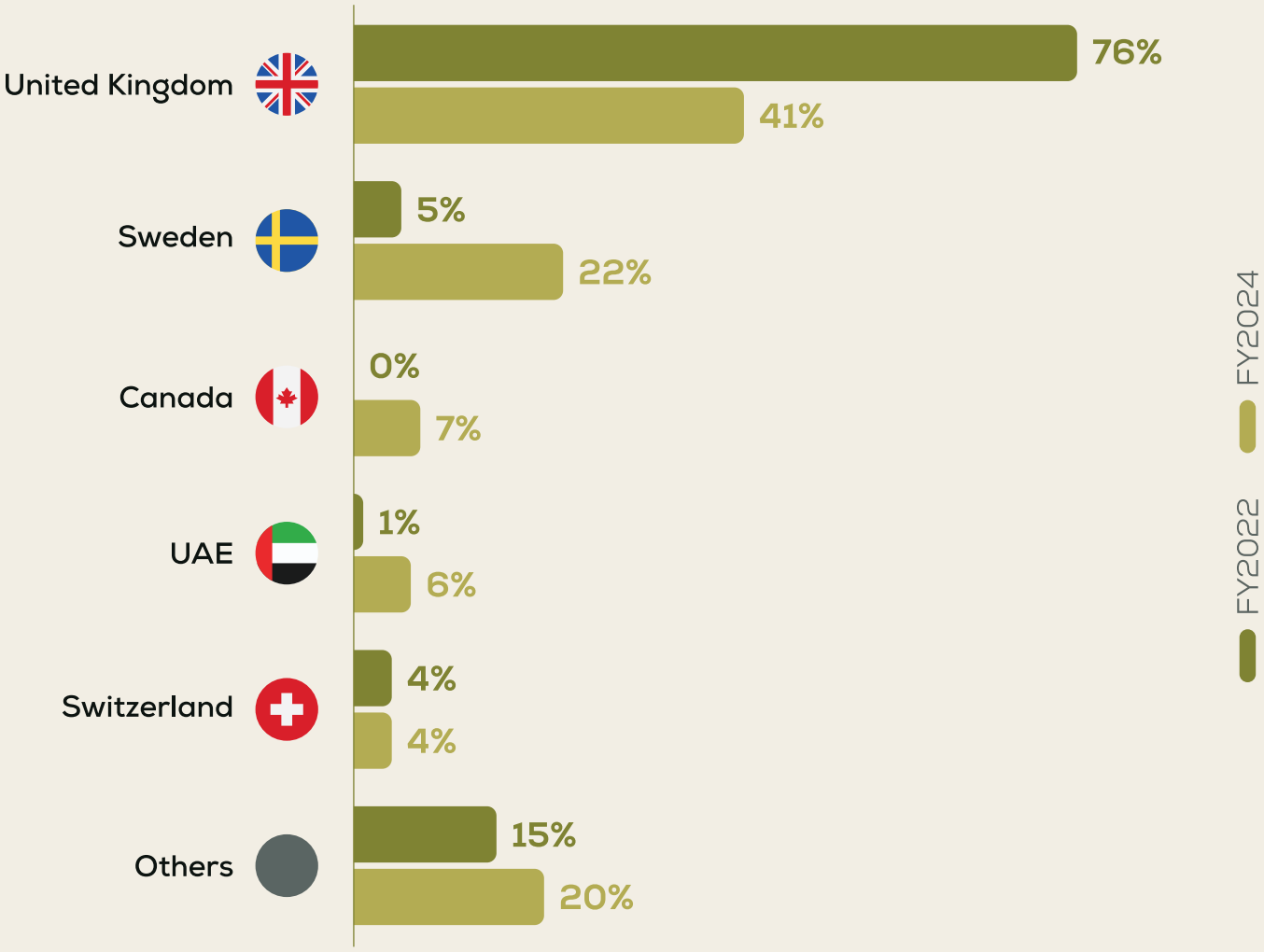
Source: Presentation based on data from the Export Promotion Bureau

While tension of a global trade war has been looming, strengthening ties with regional peers is expected to reap benefits and allow optimum diversification of the destination portfolio of Bangladeshi mangoes. This is already reflected through the country's entry to untapped markets like China, the second-largest mango-importing country in the world.

The move of Bangladesh in strengthening its destination portfolio is further underscored by the shifting mix in the portfolio over the past few years, revealing an exploratory nature, with frequent shifts in the share of destination markets and entry to new markets. At present, a key portion of the destination portfolio is held by the native markets, markets with a high density of Bangladeshi migrant communities, mainly in Europe and the Middle Eastern region.

FIGURE 6

Share of Bangladeshi Mango Exports to Top 5 Destinations in FY22 & FY24



Source: Presentation based on data from the Export Promotion Bureau

In FY24, the **native market contributed around 62 per cent (USD 112,485) of the total exports.** The past few years have seen increased exports in the non-native markets as well, which is apparent in the formal expansion of the destination portfolio, from 2 in FY14 to 22 in FY24[17].

The significant increase in export destinations over the past 10 years highlights the market penetration efforts of the government and private sector players through launching a **concentrated project to enhance the exportability of Bangladeshi mangoes, securing GI certification for local mango varieties, and investing in activities to induce good agricultural practices** in the mango orchards. These efforts have successfully translated into a significant leap of **more than 17 times increase in exports** from USD 10.09K in FY14.

In addition to the increasing trend in destination portfolio and the evolving strong global consumer base, the export figures from FY14 to FY24 revealed interesting patterns for LightCastle Analytics to further categorize the destination portfolio of Bangladeshi mangoes, beyond the definition of native and non-native markets.

Consistent markets:

Markets consistently receiving Bangladeshi mangoes for the past 2-3 years, where the markets include United Arab Emirates, Bahrain, Brunei, United Kingdom, India, Kuwait, Maldives, Nepal, Oman, Pakistan, Qatar, Saudi Arabia, Singapore, and Türkiye. While this mix is predominantly covered by native markets and neighboring regions, the inclusion of markets of Singapore, Brunei, and Türkiye marks the growing potential in non-native markets as well.

Underpenetrated markets:

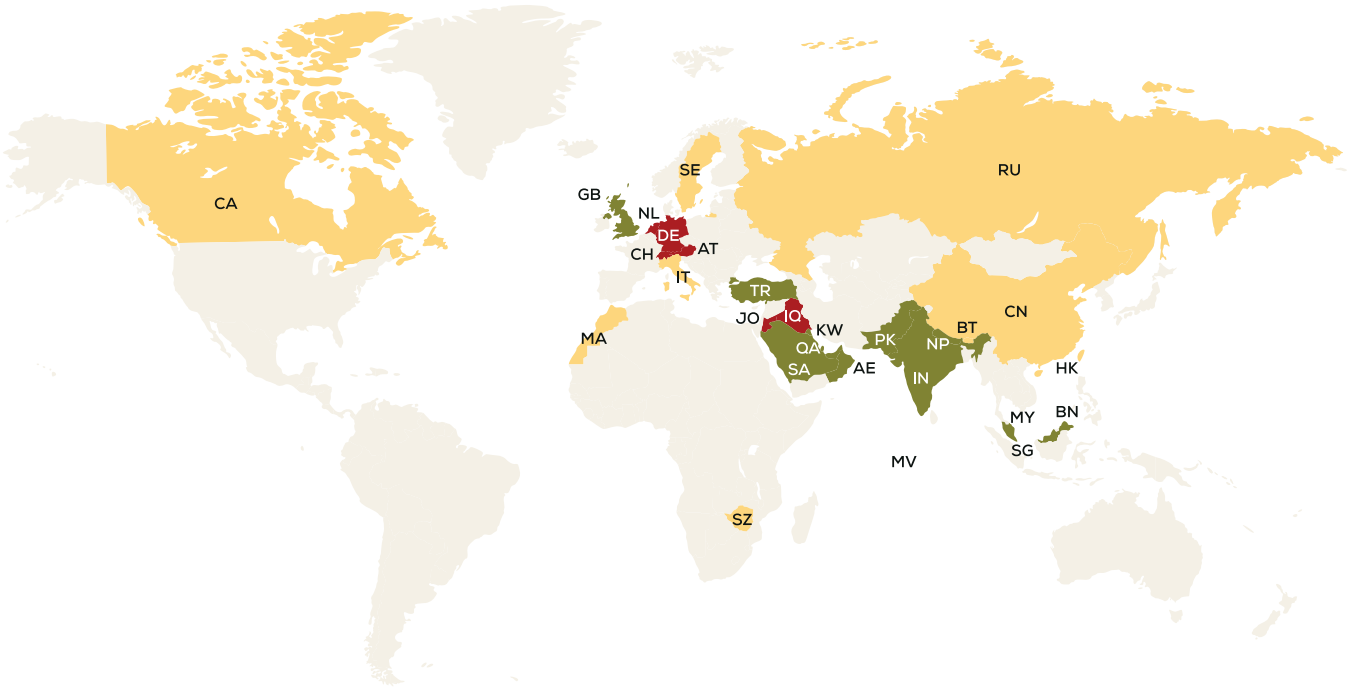
Destinations that have received a few mango exports from Bangladesh over the past 10 years but have not been importing Bangladeshi mangoes in the past 2-3 years. By strengthening trade relations, Bangladesh has the potential to penetrate further into these markets as the first step has already been made in these markets, where the list includes Austria, Germany, Iraq, Jordan, and the Netherlands.

Emerging markets:

Markets with irregular Bangladeshi mango imports but have received the mangoes at least twice in the past 5 years. These are still explorative markets for Bangladeshi mango exporters, and the emerging destination portfolio includes Bhutan, Canada, Switzerland, Hong Kong, Italy, Morocco, Russia, Sweden, and Swaziland. This list of markets also represents countries with rising migrants from Bangladesh.

FIGURE 7

Global Footprint of Bangladeshi Mangoes: Present and Prospects



Consistent Market

AE	United Arab Emirates
BH	Bahrain
BN	Brunei Darussalan
GB	Great Britain
IN	India
KW	Kuwait
MV	Maldives
MY	Malaysia
NP	Nepal
OM	Oman
PK	Pakistan
QA	Qatar
SA	Saudi Arabia
SG	Singapore
TR	Turkey

Emerging Market

BT	Bhutan
CA	Canada
CH	Switzerland
CN	China
HK	Hong Kong
IT	Italy
MA	Morocco
RU	Russia
SE	Sweden
SZ	Swaziland

Underpenetrated Market

AT	Austria
DE	Germany
IQ	Iraq
JO	Jordan
NL	Netherlands

Source: Presentation based on data from the Export Promotion Bureau

With the production capacity of Bangladesh, the current export-to-production rate of mangoes clearly indicates the significant unrealized potential of the country. While the growing destination portfolio of Bangladeshi mangoes is already paving the way, maintaining a strong foothold in these markets will require additional efforts and attention. In the next chapter, we will take a deep dive into identifying the bottlenecks hindering the growth of the sector and the opportunities that, with optimized allocation of resources, can boost the speed of Bangladeshi mangoes in reaching the global market.

02

Value Chain Assessment

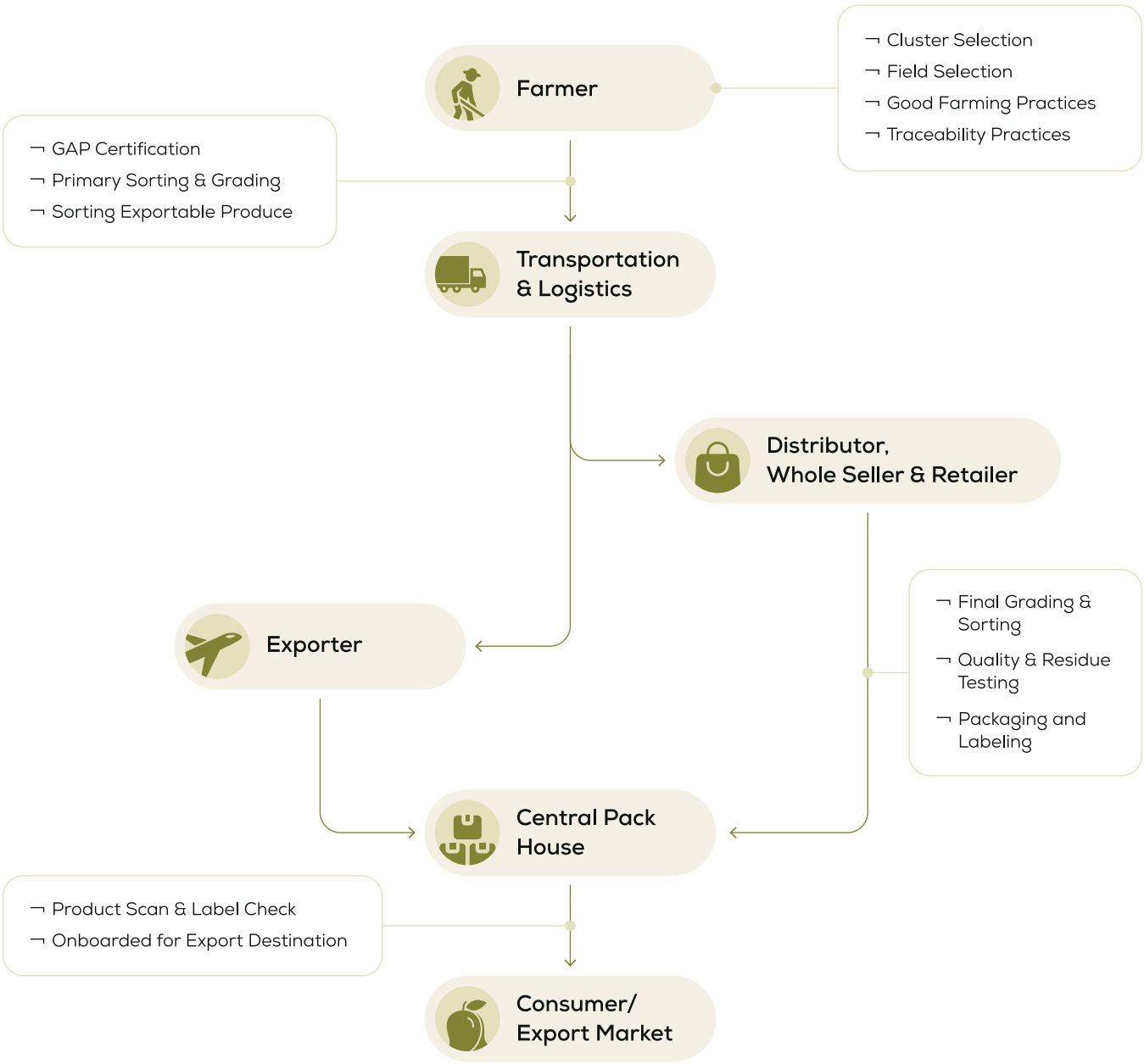
2.1

From Trees to Plates: Journey of Bangladeshi Mangoes

From orchards to overseas markets, the journey of Bangladeshi mangoes is shaped by a complex value chain involving multiple actors and processes.

FIGURE 8

Value Chain of Exportable Bangladeshi Mangoes



Farmers, cultivate mangoes while adopting good farming and traceability practices, with the support of government and private institutions imperative for exports. Exporters often formalize these practices through contract farming arrangements that ensure compliance with international standards. Once harvested, mangoes undergo sorting, grading, and treatment before being packed and transported for shipment abroad.

Therefore, the following discussion will unpack each stage of the value chain, highlighting opportunities to strengthen systems and unlock the export potential of Bangladeshi mangoes.

FIGURE 9

Market Systems Doughnut of Mango Value Chain

2.2

Understanding Intricacies of Value Chain

As mentioned earlier, this chapter will unfold a series of interconnected roles that begin long before the fruit reaches the market. From pre-harvesting decisions on inputs, spacing, climate suitability, and seasonal planning to the careful techniques applied during harvesting, each step directly influences quality and yield. Post-harvest activities, including handling, sorting, grading, packaging, treatment, storage, and transportation—further determine the fruit's market readiness and export potential. Together, these roles create a structured pathway that not only supports efficient production but also strengthens competitiveness across domestic and international markets.

Pre-Harvesting Stage:

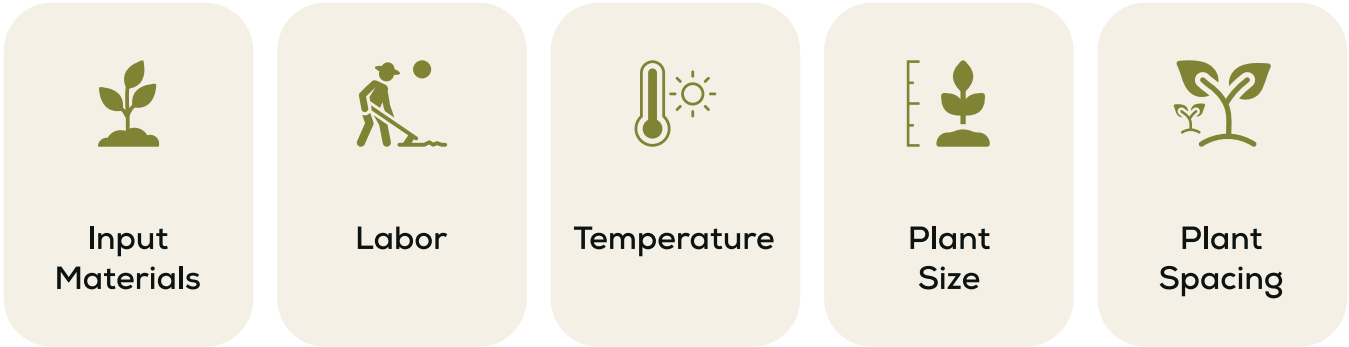
In the initial stage of pre-harvesting, farmers working in mango orchards undertake various operational responsibilities, including managing labor, procuring necessary inputs, and overseeing logistics. Soil and ambient temperature are the first crucial factors to consider when cultivating high-quality mangoes. Mangoes thrive in temperatures ranging from **24°C to 27°C,** making Bangladesh's average annual temperature (18°C -30°C) ideal for cultivation.

Additionally, proper spacing between plants is essential to allow for healthy development and optimal yield. For instance, tall mango varieties generally require a spacing of **10 to 12 meters between plants,** whereas dwarf varieties can be planted with a 2.5 to 3 meter spacing and rows positioned 8 to 10 meters apart.

Side by side, the consideration of seasonality in mango harvesting is equally important. The primary **harvest window typically spans from mid-May to mid-July,** though in some regions, a secondary season can extend from mid-August to mid-October.[18]

FIGURE 10

Factors Considered in Pre-harvesting Stage



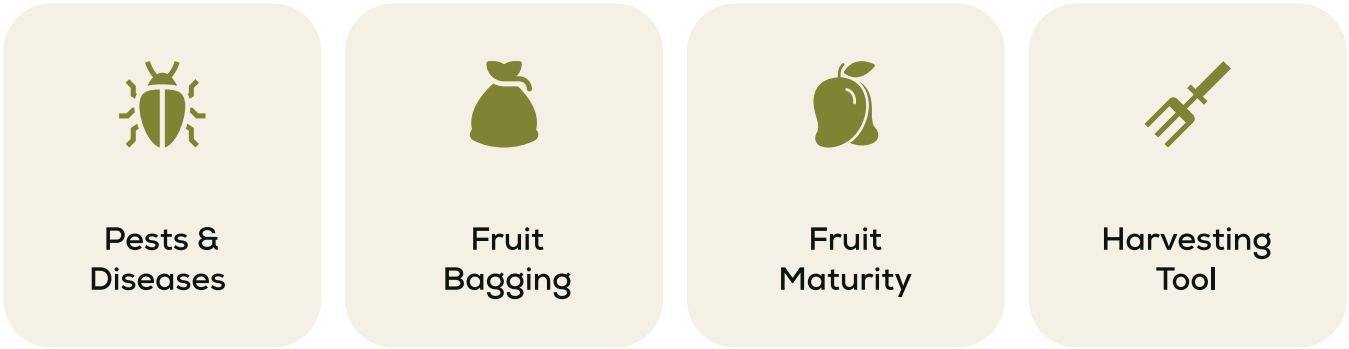
Harvesting Stage:

Following the plantation, farmers closely monitor the growth of the trees and employ various harvesting techniques to preserve fruit quality and minimize losses. These methods are essential, as farm-level post-harvest losses are estimated **at 4.4 per cent, while national losses average around 24 per cent** per season due to post-harvest challenges.[19] To mitigate these losses, farmers often **adopt bagging techniques,** incurring BDT 2.5 to 3.75 to import each bag for each mango, to shield mangoes from pests, diseases, and the impact of pesticides.

Beyond loss prevention, producers also assess the maturity of the mangoes before harvesting. This is typically determined through a combination of visual indicators, such as size, skin color, and expected harvest timing, in addition to sensory cues including sweetness, aroma, and softness.[20]

FIGURE 11

Factors Considered in Harvesting Stage



Adopting Productive Practices through Effective Awareness-Building

Through the CRAAB project, farmers in the Barind region are equipped with **specialized, hands-on training designed to improve their cultivation practices and strengthen resilience against climate-related challenges.** The training focused on pruning, bagging, fertilizer management, pest control, and drip irrigation, enabling farmers to adopt clean and efficient production techniques. These interventions not only enhanced productivity but also ensured uniform fruit size, improved taste, and higher overall quality, thereby making Barind mangoes increasingly competitive in both domestic and export markets

Initial Handling Stage (Post-Harvest):

In the subsequent post-harvest phase, to extend the shelf life of the fruit, farmers are involved in trimming and delatexing, a process that involves protecting from and removing the fresh latex from the mangoes.

Meanwhile, to optimize efficiency and minimize post-harvest losses, farmers **undertake initial sorting and grading at the orchard level as observed during field visits.** The grading of the mangoes is divided into three categories, based on quality factors such as size and color, where the farm-level categorization may vary from one farmer to another:

FIGURE 12

Classification of Mangoes

Class-A

Premium fruits for international markets or institutional buyers

Class-B

Fruits for the local or domestic market

Class-C

Fruits with the lowest appeal in the market

In terms of exportable mangoes, this step of categorization is carried out before the mangoes are sent to the central packing house or airport, allowing farmers to improve cost-effectiveness while reducing mango wastage.

Strengthening Post-Harvest Management for Initial Handling

To reduce losses and maintain quality standards, the CRAAB project established Farmers' Hubs that provided sorting, grading, and packaging services. This intervention ensured mangoes consistently met national quality benchmarks while preparing farmers for future compliance with international export requirements.

Treatment Facilities:

While sorting and grading serve as important initial steps in distinguishing high-quality mangoes from lower-grade produce, ensuring quality standards requires access to appropriate post-harvest treatment facilities. Among these, the **Hot Water Treatment (HWT)** facility or **Vapor Heat Treatment (VHT)** is crucial as these are non-chemical methods of controlling decay and preventing infections, where VHT offers better protection against quality risks, particularly pest-related risks. Further, studies have shown that in addition to HWT and VHT, post-harvest treatments such as **wax coating or aloe vera coating** in controlled temperature can further prolong the shelf life of mangoes up to 14 days.[21]

Packaging of Mangoes:

Once sorting and grading are completed, farmers pack the mangoes in **plastic crates, with multiple layers of paper between them to prevent sap from spreading.** These crates, which cost around BDT 3.5 to 4 as reported by interviewees, are both durable and reusable, offering a cost-effective option that also provides greater protection against in-transit damages such as bruising or crushing.

While these initial packaging expenses are borne by the farmers and reflected in their ultimate pricing, for exportable mangoes, the final packaging cost at the packhouse is borne by the exporters, where the type of packaging and costs may vary based on the requirements of destination countries.

The interview insights also underscored a malpractice where, at times, the mangoes from export-oriented orchards that fail initial quality checks are often repackaged in paper cartons and sold as premium-grade fruit in the domestic supermarkets.

Storage Facilities:

Given that mango is a highly perishable fruit, access to proper cooling facilities is essential to extending its shelf life. For instance, mangoes kept in cold storage can be stored for **10 to 15 days to preserve their freshness** and extend the shelf life of mangoes, which vary by mango varieties and is highly dependent on storage conditions, ranging from 4 to 8 days at room temperature, and **extending up to 2 to 3 weeks when stored at 13ºC in cold storage.**[22]

Transportation of Mangoes:

According to key interview insights, mangoes destined for non-production hub regions such as Dhaka, Khulna, and Sylhet are usually transported in **pickup vans or trucks**, often exposed to bumpy rides that can cause damage if not carefully packed. However, exportable mangoes are preferred to be transported in **cooling vehicles to preserve their fresh quality and extend their shelf life.** According to expert interviews, it has been identified that using cooling vans with an inbuilt temperature of approximately **18°C can significantly extend the shelf life from the usual 5–10 days to as long as over 15 days.**

Mango Processing:

Besides producing and exporting fresh mangoes, there are private sector players who play a significant role in the value addition of mangoes through the production and export of mango-based products. For instance, PRAN Agro Business Ltd., Acme Laboratories Ltd., and Monayem Group Ltd., among others, are involved in fruit processing and pulp production and exporting of mango-based beverages like juice.[23]

Similarly, private sector players are engaged in the production and export of different sour or sweet items like **pickle, chutney, mango bar, mango powder, and mango juice.** Instances have been found where exporters are exporting both fresh mangoes and mango-based products to international markets, including both native and non-native markets.

Financial Breakdown of Mango Production:

TABLE 3

Mango Production Costing Table

	CHAPAINAWABGANJ	NAOGAON	DESCRIPTION
Land Specification	2 acres, 1,100 trees	3 acres, 1,500 trees	
Varieties Produced	Bari 4, Amrapali, Gouromoti, Katimon	Bari 4 and Amrapali	
Fertilizer Cost	BDT 40,000	BDT 65,000	Annual fertilizer & micronutrients
Irrigation Cost[B]	BDT 3,050	BDT 12,000–14,000	Water pump, pipes, electricity/diesel
Pesticides / Insecticides Cost	BDT 45,000[C]	BDT 100,000	Includes insecticide, fungicide, growth regulators

B. Irrigation costs vary by location due to differences in orchard size, groundwater depth, soil type, and local climate.

C. Pesticide costs differ as one of the interviewee is a deemed exporter and follows Good Agricultural Practice (GAP) protocols, requiring higher-quality and regulated inputs.

ASPECT	CHAPAINAWABGANJ	NAOGAON	DESCRIPTION
Labour Cost [D]	BDT 15,000	BDT 40,000–42,000	Seasonal harvest & orchard maintenance
Land Lease (if leased) Cost	BDT 98,000	BDT 100,000	Skipped if orchard is owned
Miscellaneous / Other Costs	BDT 20,000	BDT 25,000	Other input costs
Total Annual Cost	**BDT 221,050 (leased)**	**BDT 342,000–346,000 (if leased)**	Depending on land ownership

D. Labour costs vary due to lower pesticide use reducing spraying needs in one orchard, while the larger garden size of the other requires more workers for maintenance and harvesting

2.3

Unpacking the Journey of Mangoes in the Forward Market

Compared to that of locally traded mangoes, the forward market for exportable mangoes in Bangladesh operates through a distinct process ranging from production practices to transportation and final delivery. This chapter will try to outline the **key challenges** encountered by both farmers and exporters engaged in the forward market, **shedding light on the structural and operational barriers that hinder the efficiency and competitiveness of Bangladesh's mango export ecosystem.**

2.3.1 // Quality Standard of Exportable Mangoes

To ensure the quality and compliance of exportable mango production, exporters often connect with farmers early on and advise on relevant agricultural practices, which the farmers then implement under the guidance of representatives from the Department of Agricultural Extension (DAE).

The Bangladesh Good Agricultural Practices (GAP) Policy 2020

In this context, the Bangla GAP[E] framework plays a crucial role in promoting the optimal use of inputs such as pesticides, chemical or bio fertilizers, and water, while also encouraging environmentally sustainable, safe, and traceable farming methods.

The importance of adhering to these standards is underscored by the **level of strictness maintained in international markets to ensure protection from pest infestations and other quality risks.** With a few previous cases of failure to comply, Bangladeshi mangoes had to face rejection for entry to markets such as the United States and Europe[24]. Therefore, complying with either, depending on the destination, the **national Bangla GAP or internationally recognized Global GAP standards**[F] is imperative to compete in the global market, where the criteria of international standards often vary on destination, and the international certification entails a significantly high expenditure (BDT 500,000 to 600,000), which further escalates (BDT 1 to 1.2 million) due to the involvement of foreign experts in the process, creating barriers to access for small and medium farms.

Currently, only one organization from Bangladesh holds the Global GAP certification, while few other organizations had previously held the certification but were unable to continue. To deal with such high expenses, group farming is often encouraged, as it allows producers to share certification costs and reduce the financial burden associated with meeting export compliance requirements.

E. Bangladesh GAP is an overarching framework of agricultural activities designed to ensure the production of safe and quality food and non-food products, while integrating environmental, economic, and social security considerations. Its procedures are applied across all stages, from farming and harvesting to post-harvest processing, collection, packaging, and transportation.

F. GLOBALG.A.P. (formerly EUREPGAP) is a private sector body that sets voluntary global standards for the certification of agricultural products around the world. It was originally developed by European supermarket chains and their suppliers to ensure food safety and quality in their supply chains.

To assist the farmers in understanding and adhering to the GAP standards, **DAE offers capacity building opportunities and financial assistance** in the form of subsidies. Additionally, they provide **guidance on the procurement of essential inputs** such as machinery, chemicals, and seeds, all of which contribute to improving the productivity and quality of mango harvesting.

These assistances equip the farmers with their first few steps towards understanding the international markets and work on their level of preparedness to produce exportable mangoes for these markets.

Treatment Requirement for Certification

To qualify for export, mangoes undergo a series of treatment and testing processes essential to comply with the stringent import protocols set by destination countries. For example, one of the **conditions for China to import Bangladeshi or any foreign mangoes is that these undergo the complete hot water treatment process**[25]. Similarly, **Japan strictly requires vapor heat treatment for exportable mangoes.**

Despite the necessity of these treatments, Bangladesh currently has **only 5 HWT facilities,** and the **VHT infrastructure has yet to be implemented.** This lack of adequate decentralized treatment plants near production zones makes it challenging for producers seeking to qualify as export-compliant mango suppliers. Moreover, it creates a **costly and inefficient transportation loop**, as, with the current system, mangoes are transported from orchards to HWT facilities, then returned to the orchards post-treatment before making their way to Dhaka for export. This back-and-forth journey places an additional burden on farmers and exporters.

Certification Standards

After undergoing proper treatment process, the mangoes proceed to the certification phase. A key component of this certification process is facilitated at the **Central Packing House under the supervision of the DAE,** where mangoes are treated, inspected, and tested in accredited laboratories to obtain export-compliant certifications for the European market.

Depending on the buyers' requirements, the process is different for some exporters, where the treatment processes are carried out directly at the orchard level, and the mangoes are directly sent to the airport. In these cases, the inspection and **certification processes begin from the orchard level and continue through to final dispatch,** ensuring regulatory integrity across all channels.

TABLE 4

Certification Requirement for Exportable Mangoes

SL	CERTIFICATION & COMPLIANCE[G]	ISSUER
01	Traceability Certificate	Upazila Agricultural Officer
02	GAP Certification	Foreign GAP Experts
03	Certificate of Origin	Department of Agricultural Extension
04	Phytosanitary Certificate[H]	Department of Agricultural Extension
05	Certificate of Analysis[I] [26]	Accredited and Recognized Laboratory or Department of Health of Destination Markets
06	Customs Clearance Certificate	Customs Office

2.3.2 // Storage Infrastructure

Despite having an abundant seasonal supply of mangoes, Bangladesh faces infrastructural constraints that hinder its export potential. During the harvest season, with an abundance of supply, the lack of a strong cold chain infrastructure, and the limited processing capacity of CPH and the airport, the farmers often lose value on their harvest, as the oversupply drives down the price.

On top of that, due to **a lack of a decentralized, coordinated and controlled temperature system,** Bangladesh incurred approximately **USD 2.4 billion in post-harvest losses across its agricultural sector, in 2024 alone**[27]. This unfortunate wastage of mangoes not only undermines the farmers' income but also creates barriers for exporting mangoes in the global market.

Following the storage limitations, Bangladesh may face further barriers in exporting mangoes to countries in the international market. According to the Chinese quality standard, **processed and heat-treated mangoes should be stored separately** to avoid re-infection by pests.[28]

G. These are the names of the top few certificates identified during the interviews. A longer list of required licenses and certificates is added in the Annex.

H. Valid for 24 hours

I. Analyzed based on country-specific requirements, with varying parameters, including radiation level, genetical modification, residue limits, or level of specific elements, set by destination markets.

2.3.3 // Packaging and Traceability Requirement

To qualify for exporting, Bangladeshi mango exporters also need to adhere to international packaging and traceability standards to ensure product safety, authenticity, and transparency in global markets.

Packaging Standards

In the initial stage of packaging from the mango orchard to Dhaka, plastic crates are mostly used. However, during the final stage of packaging, exporters are required to comply with the **required packaging materials mandated by buyers as per the key insights gathered during interviews.**

At the final stage of packaging, **paper-based sturdy cartons are mostly used,** similar in style to those used for dates, apples, or pears. Ideally, cartons using 5 plies of paper or more are advised to be used for packaging, for which an import dependency has been noted, with each carton costing BDT 40 to 50. Additionally, for some cases, based on buyer and destination requirements, **mangoes are packaged with mesh net sleeves** before being packed into cartons. These mesh sleeves further cushion the mangoes from any physical damage during transport or handling.[29]

While packaging focuses on protecting the mangoes from internal and external harms, the process also ensures transparency by presenting key traceable information on the cartons.

FIGURE 13

Packaging Requirement for Traceability According to the Export Guideline of Bangladesh to China

Traceability Requirement

Traceability has emerged as a non-negotiable requirement in global trade, particularly in the context of fresh produce, to ensure information about the whole lifecycle of the produce and enable transparency on good and safe farming practices. For Bangladeshi mango exporters, traceability begins at the orchard level, where adherence to GAP standards are monitored during the pre-harvest period. During the field visits, it has been highlighted that the farmers are encouraged to maintain a record book of the different input materials applied to the garden.

To further formalize and streamline the process, DAE has recently introduced a digital application, PQ-Agri Traces Application, ensuring better traceability and a smooth certification process.

2.3.4 // Transportation of Exportable Mangoes

The transportation process for exportable mangoes requires an additional layer of scrutiny compared to the domestic market. Depending on the requirements of the buyer country, mangoes are transported either to a **central packing house or directly to the airport.** For buyers in the **European Union and the United Kingdom,** it is mandatory for the mangoes to first be assessed at a **central packing house**. For this, the Europe-bound mangoes are transported from the orchard to the government's Central Pack House (CPH) before being sent to the airport, where the country's only CPH and the international airport at the capital are located at two ends of the city, adding to the journey of the exportable mangoes.

In contrast, many other destination countries do not require this intermediary step of certification, allowing mangoes to be **transported directly from orchards to the airport.** In such cases, the necessary treatments and tests are conducted at the farmer's level.

Central Pack House (CPH)

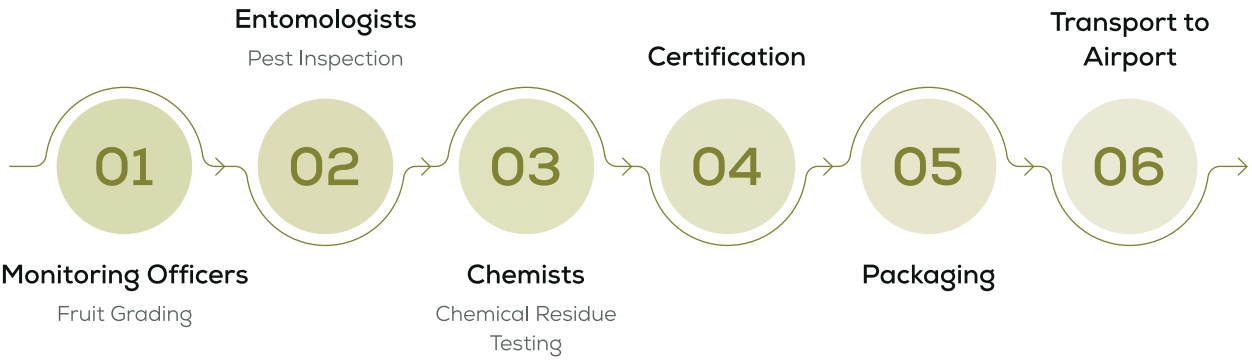
Once the mangoes arrive at the central packing house, they are manually unloaded and cleaned and then go through undergo a second round of sorting, grading, and washing to ensure consistency in quality. Subsequently, the CPH, in coordination with the Plant Quarantine Authority, issues the international quality standard certificates, ideally the phytosanitary certificate, and ensures that the mangoes are packed according to the specific requirements of the buyers; all in a quarantined facility located in Shyampur a southern area in Dhaka. To certify mangoes, CPH follows a three-tier inspection system involving monitoring officers, entomologists, and chemists.

According to the expert opinion, after the inspection and certification processes are completed, the mangoes are packed into cartons and sealed, and the entire process at CPH **takes about 4 to 5 hours.** After which, these are transported to the airport where **approximately 50 per cent of the exporters use cooling vehicles** and many of them avail the subsidized cooling vehicle facility of the Hortex Foundation, which costs around BDT 5,000 to rent the vehicle[J].

J. When availed vehicle from private sector service providers, the cost will be higher, and the rent fee does not include the fuel expenses.

FIGURE 14

Stages in Central Packing House



Airport Infrastructure

The **international airport at Dhaka** located at the northern part of the city also has a **packaging facility,** mainly for the mangoes destined for markets with low quality requirements. For these mangoes, the required testing and certifications are completed before reaching the airport.

Upon reaching the airport, the lack of dedicated cooling facilities remains a challenge. While the third terminal of Dhaka airport is expected to have dedicated and expanded cold storage facilities for agricultural exports, the current infrastructure includes an airport-adjacent cold-storage facility of the Bangladesh Agricultural Development Corporation (BADC). However, with the **limited space at the current facility and growing exports of perishable items,** fresh mangoes have been reported to be often stored in open spaces alongside other exportable items.

In addition to the existing challenges, export barriers continue at the airport as well. The EU and the UK mandate that mangoes exported from Bangladesh undergo explosive detection system (EDS) scanners, and the **scanner at the airport frequently** remains non-functional, exposing the exporters to uncertainty and cost implications of exporting through another country. The reliance on foreign experts for repairs and the lack of local experts further exacerbate the situation, leading to delays and increased operational costs. Unfortunately, this often leads to the rejection of mangoes that would otherwise meet export standards.

Moreover, there is **no separate cargo space** allocated for perishable agro-products such as mangoes as highlighted during the interviews. As a result, mangoes are stored together with non-agricultural products, which compromises their quality. Exportable mangoes are then usually transported via passenger flights, and the exporters have reported that they are currently facing **higher air freight charges (BDT 250 to over BDT 500 per kilogram),** which are expected to increase this year too. With this and the limited capacity and frequency of flights at present are further influencing the overall transportation cost, consequently affecting the price competitiveness of Bangladeshi mangoes.

2.3.5 // Marketing and Branding

Despite producing a significant volume of mangoes annually, Bangladesh continues to face a notable gap in establishing a strong international brand presence for its mangoes. One of the reasons could be that branding efforts have traditionally focused on more established export products, which continue to dominate the country's export portfolio. This creates a cycle where emerging products like mangoes receive comparatively less attention in global promotional strategies.

As a result, the international pricing of Bangladeshi mangoes remains highly competitive due to the **limited global branding initiatives.** The tendency among exporters to prioritize competitive pricing strategies to strengthen their foothold worsens the pricing situation in the global market. While the competitive approach supports market access, it may also limit the potential for premium positioning of Bangladeshi mangoes on the global stage. The **limited exposure to market information** further affects the pricing strategies of the exporters.

2.4

Enablers and Disablers in the Forward Market

While the overall value chain of Bangladeshi mangoes holds great potential, some key enabling and disabling factors or initiatives for the forward market journey have been summarized below:

TABLE 5

Enablers and Disablers in the Forward Market of Bangladeshi Mangoes

AREA OF FOCUS	ENABLER	DISABLER
Quality Assurance	Adoption of GAP and global GAP certification ensures standardized quality assurance processes	Absence of skilled local certifiers of global GAP standards drives the certification costs high
Inventory	Presence of cold storage facilities extends shelf life and reduces waste	Inadequate space limits the storage capacity of mangoes
Treatment	Availability of the HWT facility aids in enhancing mango quality and supports compliance with export requirements	Limited number of HWT units (only five nationwide) hampers widespread treatment access
Transportation	Use of cooling vans maintains mango quality during transit	Insufficient number of cooling vehicles and a strong and consistent cold chain infrastructure affect competitiveness of Bangladeshi mangoes
Traceability	Introduction of PQ-Agri Traces App is expected to digitally facilitate traceability of mango origin	Lack of consistent record-keeping and reporting hinders the traceability efforts

AREA OF FOCUS	ENABLER	DISABLER
 **Lead Time**	Passenger cargo enables faster delivery to export markets	Lack of adequate separate cargo spaces for perishable exports and high air fare raise export costs
 **Market Access & Linkages**	Ongoing bilateral trade agreements, such as with China, open new markets	Lack of market information and weak negotiation skills limit export potential

03

Riding on Good Practices for Accelerated Growth

While the value chain reveals some systemic barriers to the exportability of Bangladeshi mangoes, the report has also identified a few good practices adopted in a small scale or in peer countries, which could be scaled in Bangladesh to benefit the local ecosystem.

3.1

Application of Ultra-High-Density Plantation to Maximize Production

In the new mango orchards in Naogaon and Chapainawabganj, the ultra-high-density plantation (UHDP) method is attracting rising interest among farmers due to its optimized resource allocation in the pre-harvesting phase. As the name suggests, the methodology makes **optimum use of land and other resources, enabling a dense plantation system.** The system ensures that each plant is receiving an adequate amount of natural light and water through trimming and drip irrigation. With this, the orchards can be better managed by the farmers, and the process allows **easier harvesting practices with controlled size of each plant with maximum production prospects.**

To support this widespread adoption of UHDP and boost productivity through effective awareness-building, the CRAAB project conducted 300 training batches, reaching 7,501 participants, including **1,166 women farmers and 284 members of ethnic communities,** ensuring inclusivity across the region. With the gradual reduction in arable lands, UHDP is offering access to new farmers, and the farmers are also seen to be making further utilization of the space through planting a few seasonal vegetables. Beyond productivity gains, this approach also contributes **to carbon offsetting,** creating access to carbon finance for farmers.

3.2

Formalization of Farmer-Exporter Relationship to Strengthen Traceability

In consideration of the importance of GAP adherence, there is a practice in the ecosystem where the exporters and farmers get into informal agreements. This informal contract farming modality establishes a system of **conditional implementation of good farming practices,** gradually normalizing the practices and enabling the farmers to get accustomed to those and reap the benefits. However, the informal nature of the relationship, with the lack of enforceability, sometimes results in situations where, to leverage the low price in local markets caused by oversupply of mangoes during harvesting season, exporters reduce the order size from the contract farmers and procure directly from the markets. With the rising demand among destination markets to ensure traceability, formalization of such relationships is expected to gain more interest and will establish an accountable and traceable system in the mango value chain.

This avenue could be **integrated into the PQ-Agri Traces application of DAE, simplifying the formalization process for farmers and exporters** so that parties are able to establish connections and simple and enforceable agreements through the platform. With a digitalized system in place, both parties will also have access to relevant information on the backward and forward journeys of their mangoes, which they can leverage for their business. This integration would also enhance the prospect of developing strong data-backed strategies and policies for the value chain.

3.3

Improvements in the Infrastructure for Mango Harvesting Tools

There remains considerable scope for improvement in the infrastructure supporting forward market linkages.

To ensure the quality of mangoes is not compromised, the inclusion of technology is imperative from the harvesting stage. For instance, during the harvesting period, to extend the shelf life of mangoes and shield the fruits from pesticide residues, farmers use fruit bags when the mangoes are about **1 to 1.5 months old;** they **bag them directly on the trees.** This protects them and keeps them fresh for longer. Once the mangoes reach maturity, careful harvesting becomes crucial.

At this stage, the stems are prone to snapping with even slight pressure, which can compromise the quality of the fruit. To mitigate this risk, the use of **long-poled picking bags** is recommended while pulling the mangoes from trees, allowing for gentle and precise harvesting without damaging the mangoes.[30]

3.4

Integration of Potential Technology in the Treatment Facilities

Another key technological advancement, the sector may look up to is the establishment of an **irradiation facility** in Gazipur, on which the Bangladesh Institute of Nuclear Agriculture (BINA) is working towards. The facility would further strengthen the treatment infrastructure of exportable mangoes and translate into an increased shelf life of perishable products.

3.5

Fostering Collaboration for Cost and Knowledge Sharing

The report noted a progressive and collaborative practice among the Thai mango farmers, backed by their government, in establishing a collaborative network, the Thai Mango Growers' Association (TMGA), to drive growth through a cost and knowledge-sharing modality. With support from the Ministry of Agriculture, TMGA was established in 2008 to accelerate the quality and exportable mango production growth of Thailand. The association enables active engagements of farmers and facilitates the expansion of community or cooperative-based farming model it has developed, to **enhance the technical and financial capacity of the farmers** in tapping into the export potential of the country through **sharing resources (input materials, production planning, packing house access, certification, destination markets) within small groups and clusters.** TMGA also maintains regular communication through social media channels to **update the farmers on new technologies and market improvements** and organizes **capacity-building events and tripartite engagements.** This collaborative approach towards farming, capacity building and policy advocacy has helped the farmers in optimizing their costs and resource allocation and producing quality fruits and enabled access to wider markets for the country.

Drawing inspiration from such collaborative frameworks, the CRAAB project undertook a similar approach in Bangladesh to strengthen market linkages and enhance the capacity of smallholder mango farmers. The project connected five suppliers with Farmers' Hubs through a dedicated market linkage workshop. These suppliers collectively procured 4,500 MT of mangoes and distributed them to major domestic markets such as Dhaka and Chattogram. While, due to logistical challenges, international exports have yet to be realized through this market linkage, these efforts have laid the foundation for stronger domestic supply chains and future export readiness.

3.6

Leveraging Technology through Learning from the Journeys of Regional Powerhouses

Taking a deeper look into the journey of two of the leading mango exporters of Asia, Thailand and India, the state of the Bangladeshi ecosystem can be further analyzed. While in terms of geographic positioning and production capacity, Bangladesh has a good head start, the country has yet to go a long way to capitalize on technology to strengthen the forward market value chain and to enhance the quality of the fruits.

TABLE 6

Cross-country Comparison of the Forward Market Value Chain of Mangoes

ASPECT	INDIA	THAILAND	BANGLADESH
Global Production Rank	Largest mango producer	10th largest producer	8th largest producer
Infrastructure and Technology	**Research:** Shelf life, quality and taste are gaining more focus	**Research:** Off-season production technology and processed food innovation have boosted potential	**Research:** Shelf life, quality, appearance, taste, and organic inputs are being focused upon
	Cultivation: UHDP, pruning, and carbon bagging practices are widely adopted	**Cultivation:** Pruning, thinning, and carbon bagging practices are common.	**Cultivation:** UHDP, pruning, and carbon bagging practices are gradually being adopted
	Treatment: HWT, VHT, Irradiation facilities are common	**Treatment:** HWT, VHT. irradiation facilities are common part of export infrastructure	**Treatment:** HWT facilities are limited in number, and VHT and irradiation have yet to be commercially introduced

ASPECT	INDIA	THAILAND	BANGLADESH
	Storage: Cold chain or controlled temperature network is gradually developing and gaining strength	**Storage:** Cold chain or controlled temperature network is gradually developing and gaining strength	**Storage:** Cold chain mainly used in post-packhouse transit phase
Laboratories and packhouse	70+ authorized laboratories[31] and 10+ authorized packhouses[32], including private facilities spread across the key production hubs.	Regional One Stop Service Centers for quality control (pre and pro-harvest testing)[33] and 10+ packhouses[34] catering to regional needs.	10+ laboratories[35] and 1 government-managed packhouse, where the laboratories are mostly concentrated in the capital city and a few near the mango production region.
Transport and Logistics	**Mode of transport:** Air **Freight cost:** Comparatively low but gradually increasing (~USD 3 per kg*) *Varies with distance **Tree to shelf timeline:** 3-4 Days	**Mode of transport:** Air **Freight cost:** Comparatively low (~USD 2.5 to 3.5 per kg*) *Varies with distance **Tree to shelf timeline:** 3-4 Days	**Mode of transport:** Air **Freight cost:** Comparatively high and in an increasing trend (~USD 5+ per kg*) *Varies with distance **Tree to shelf timeline:** 7-8 Days
Processed Products	Top products include canned and dried mangoes, jam, pickles, chutneys. and beverages.	Top products include canned, dried and frozen mangoes, sticky rice, juice, and yogurt	Top products include mango bar, pickles, chutneys, and beverages

Being the 8th largest producer and the land of many attractive mango varieties, a comparative analysis with regional powerhouses reveals the high potential of Bangladesh to accelerate its export growth, where the peers have unlocked their success cases through strategic initiatives:

- Enhancing **research and innovation capacity and resources** to improve the quality (shelf life, taste, appearance) of the fruits and to introduce value-added solutions, further strengthening the value chain.
- Ensuring a strong **traceable system in the value chain**, bolstering the branding efforts.
- Strengthening the backward market of the value chain by enabling **cooperative-based farming and exporting models,** where a group of farmers collectively achieve GAP certification and connect with packing houses, including private ones.
- Capitalizing value addition and quality control to gain **traction in the Asian markets,** in addition to the largest importing regions.

Drawing from the in-depth understanding of the value chain of Bangladeshi mangoes, the strategic priorities for the sector to reach its next level of export growth can be mapped out. The following chapters discuss these priorities and invite the key stakeholders to take the torch forward to enhance the exportability of Bangladeshi mangoes.

3.7

Current Best Practices of Mango Production in Bangladesh

Following such, a series of complementary initiatives and best practices have since been implemented across Bangladesh to further elevate mango production quality and expand export opportunities. Table 7 summarizes the key ongoing projects and practices, highlighting their focus areas and the resulting impact on mango quality and export readiness.

TABLE 7

Current Initiatives to Facilitate Quality Produce and Boost Export

INITIATIVE / PRACTICE	IMPLEMENTING AGENCY	FOCUS AREA	IMPACT ON QUALITY OUTPUT
Exportable Mango Production Project (2022–27)	Government	Training, Best Practices	» Capacity building » Higher export-quality mangoes » Improved fertilizer and pest management » Pruning, bagging, and pest control Covering 46 Upazilas in 15 Districts
Natural Ripening, Fruit Bagging, Bio Pesticide Usage	Private Sector Players	Chemical-free Production	» Safer mangoes » Export-compliant
Hot Water Treatment (HWT) Facility[K]	Private Sector Players	Post-Harvest Management	» Disease reduction » Longer shelf life
Water-Efficient Technology/ UHDP Drip Irrigation	Private Sector Players	Water Efficiency, Yield	» Consistent quality » Higher yields in a smaller area

K. Hot Water Treatment (HWT) in Bangladesh is still at a nascent stage and needs to be expanded to meet growing demand. According to expert interviews, HWT facilities are currently available in only five locations, which is insufficient. To ensure broader access and meet export standards, it is essential to scale up the availability of this technology for all mango exporters.

04

Strategic Roadmap towards Export Boosting

4.1

Private Sector Players

The value chain analysis has brought out a number of potential policy shifts that could play a crucial role in unlocking Bangladesh's full potential in the global mango export market. This chapter outlines a set of actionable recommendations that private sector players (PSPs) may consider to enable a more robust, competitive, and sustainable export ecosystem, ultimately helping the country establish a stronger foothold in international markets.

TABLE 8

Recommendation Outline for Private Sector Players

AREA OF FOCUS	SUB-AREA	ROADMAP TO PROGRESS	TIMELINE*
Infrastructure Development In the Post-Harvesting Stage	Inventory and Storage	» Private sector players (PSPs) can establish a network of cold storage facilities at key points, from near the orchards to packing houses and potentially near transportation hubs.	» Mid-term
	Treatment	» Private investments or public-private partnerships can be made to establish hot water or vapor heat treatment facilities.	» Short-term
		» E-Beam irradiation technology can be introduced to enhance the treatment facilities.	» Long-term
	Packaging	» PSPs can explore offering locally made and cost-effective strong carton packaging, e.g., 5+ ply with corrugated paper.	» Short-term
		» PSPs may also invest in modified atmosphere packaging to increase the domestic capacity regarding this and further strengthen the quality control measures.	» Long-term

*SHORT-TERM: 0-2 YEARS; MID-TERM: 2-3 YEARS; LONG-TERM: 3-6 YEARS

AREA OF FOCUS	SUB-AREA	ROADMAP TO PROGRESS	TIMELINE*
	Transportation and Logistics	» PSPs can contribute to deploying cooling vehicles to ensure the safe transportation of mangoes from orchards to the airport, thereby maintaining fruit quality during transit.	» Mid-term
		» A public-private partnership with the Hortex Foundation may also be considered as a part of this, scaling Hortex's current initiative and leveraging its network of perishable good exporters.	» Short-term
		» PSPs can invest in strengthening the air transport capacity for exporting perishable goods such as mangoes and developing dedicated cargo spaces for this purpose.	» Long term
Finance	Agricultural Financing	» Financial institutions may consider community-based financing models to facilitate access to the market and support the quality control practices.	» Mid-term
Technology	Value-Added Mango Products	» By following similar strategies of the peer nations, such as Thailand, Bangladesh can also open up new market segments by diversifying its mango-based products.	» Mid-term

*SHORT-TERM: 0-2 YEARS; MID-TERM: 2-3 YEARS; LONG-TERM: 3-6 YEARS

AREA OF FOCUS	SUB-AREA	ROADMAP TO PROGRESS	TIMELINE*
		» PSPs may increase investment in the production of mango-based products such as mango bars, pulp, dried mangoes, beverages, and mango powder, among others, to cater to a diversified consumer base and gain a stronger foothold in the global mango market.	» Mid-term
Knowledge and Branding	Marketing and Branding	» PSPs, along with exporters, associations, or relevant government entities, may help in arranging international food and agricultural trade fairs and exhibitions.	» Short-term
		» PSPs may replicate branding strategies similar to the ones adopted for RMG exportable products, for effective global positioning of Bangladeshi mangoes.	» Short-term
		» Producers can penetrate global super shops to successfully enter major international retailers such as Walmart. It will significantly increase global consumer awareness of Bangladeshi mangoes.	» Mid-term

*SHORT-TERM: 0-2 YEARS; MID-TERM: 2-3 YEARS; LONG-TERM: 3-6 YEARS

4.2

Government Stakeholders

The following table outlines key focus areas, relevant sub-areas, responsible agencies, and recommended actions needed to strengthen the export ecosystem. A collaborative, multi-agency approach with support from both public and private stakeholders will be critical to ensuring the sustainable growth and international competitiveness of Bangladeshi mangoes.

TABLE 9

Recommendation Outline for Government Stakeholders

AREA OF FOCUS	SUB-AREA	RESPONSIBLE AGENCIES	ROADMAP TO PROGRESS	TIMELINE*
Infrastructure	Storage	Ministry of Agriculture, BADC, Ministry of Industries	» Expansion of cold storage infrastructure, and promotion of PPPs for cold chain investment.	» Mid-term
	Transport	Ministry of Commerce, Ministry of Shipping, Civil Aviation Authority, Hortex Foundation	» Scaling up the controlled temperature transport network.	» Mid-term
			» Facilitating access to dedicated air cargo spaces for perishable products and increasing the capacity of these spaces based on evidence-backed projections.	» Mid-term
			» Incentivizing private cold chain players.	» Short-term
			» Strengthening and streamlining the supply chain through upgrading the airport in Rajshahi for exporting goods.	» Mid-term

*SHORT-TERM: 0-2 YEARS; MID-TERM: 2-3 YEARS; LONG-TERM: 3-6 YEARS

AREA OF FOCUS	SUB-AREA	RESPONSIBLE AGENCIES	ROADMAP TO PROGRESS	TIMELINE*
Technology	System Digitalization	ICT Division, Ministry of Agriculture, Startup Bangladesh Limited	» Promotion of digital traceability tools (e.g., PQ-Agri Traces).	» Short-term
			» Development of an all-in-one solution through the digital tools, to leverage the power of data to trace, assess, and promote Bangladeshi mangoes, including formalizing informal relationships, e.g., informal contract farming model, to strengthen accountability measures.	» Mid-term
			» Supporting Agri-Tech startups to capitalize on technological advancements.	» Short-term
Regulatory & Quality Standards	Quality Compliance	DAE	» Strategic expansion of treatment facilities such as Hot Water Treatment and Vapor Heat Treatment, and streamlining the value chain by placing the facilities at key locations in high production regions and near the nearest airport or packing house, and inviting private sector participation in this. Thus, building a strong ecosystem at the production hubs.	» Short-term

*SHORT-TERM: 0-2 YEARS; MID-TERM: 2-3 YEARS; LONG-TERM: 3-6 YEARS

AREA OF FOCUS	SUB-AREA	RESPONSIBLE AGENCIES	ROADMAP TO PROGRESS	TIMELINE*
			» Supporting efforts for national GAP or Global GAP adoption by enabling Group certification for farmers to be able to share the high certification costs.	» Mid-term
	National Regulation	DAE, BSTI, Ministry of Agriculture	» Enforcement of national GAP standards in all levels of mango production and export supply chain.	» Short-term
			» Enhancing the local capacity of regulatory and quality certification, to reduce dependency on foreign certifiers and the associated high costs.	» Long-term
Finance	Agriculture and Business Financing	Bangladesh Bank, Ministry of Finance, Agricultural Credit Division, Financial Institutions	» Offering subsidized financing options for quality assurance, storage, and treatment.	» Short-term
			» Facilitating access to agricultural finance for both farmers and exporters, with varying business sizes and through enabling access to community-based financing.	» Mid-term

*SHORT-TERM: 0-2 YEARS; MID-TERM: 2-3 YEARS; LONG-TERM: 3-6 YEARS

AREA OF FOCUS	SUB-AREA	RESPONSIBLE AGENCIES	ROADMAP TO PROGRESS	TIMELINE*
Knowledge & Branding	Capacity-building	Ministry of Commerce	» Enhancing capacity-building efforts focusing on export readiness and competitiveness.	» Short-term
			» Investing in research and innovation initiatives to enhance the quality of mangoes and explore avenues of value-added products.	» Mid-term
	Trade Relations	Ministry of Commerce, MoFA, EPB	» Strengthening bilateral and multilateral trade agreements to promote and enhance market access to key export destinations, including global top importers and Asian top importers.	» Long-term
			» Unlocking the full potential of the diplomatic missions to establish strong connection with prospective buyers.	» Mid-term
	Country and Product Branding	EPB, Ministry of Commerce, MoFA	» Launching of a global branding campaign for Bangladeshi mangoes and boosting efforts in arranging international food and agricultural trade shows, and building partnerships with PSPs for such efforts.	» Short-term

*SHORT-TERM: 0-2 YEARS; MID-TERM: 2-3 YEARS; LONG-TERM: 3-6 YEARS

AREA OF FOCUS	SUB-AREA	RESPONSIBLE AGENCIES	ROADMAP TO PROGRESS	TIMELINE*
			» Improving market intelligence and building a strong pipeline of transforming the insights into successful export earnings from a wider network of markets, including countries and global supershops.	» Mid-term

*SHORT-TERM: 0-2 YEARS; MID-TERM: 2-3 YEARS; LONG-TERM: 3-6 YEARS

05

Conclusion

Bangladesh, placed among the top ten largest mango producers, boasts an impressive annual capacity of over 2 million tons. Despite this significant production, the country has yet to fully realize its export potential, with a mere export-to-production rate of 0.055 per cent in FY24, and at least 24 per cent of production wasted due to post-harvest hurdles. This underscores the **systemic barriers within the export ecosystem and the need to understand the value chain in depth.**

While the outlook for Bangladeshi mango exports is improving, with earnings significantly increasing, surpassing previous records, it can be inferred that one of the factors fueling this growth is the expansion of export destinations and exploration of large consumer markets like China. The destination portfolio is moving towards a healthy mix of native markets and non-native markets, with the prospect of penetrating further into large importers such as Germany and the Netherlands.

With such brighter prospects, it is essential for the country to rise to the next level of growth and address the complexities that exist within the current value chain and infrastructure. The report highlights these key areas of improvement to build an export-friendly ecosystem for Bangladeshi mangoes, putting a key focus on maintaining quality through different treatment measures and attesting those through a strong and perishable goods-friendly quality assurance and transportation infrastructure. The report also advocates for the optimum use of information and technology to enhance farming practices, integrate good agricultural practices in the regular system, ensure a smooth flow of data to relevant stakeholders (traceability of products, market intelligence to boost investments), enable farmers and exporters to strengthen relationships to generate quality products, and boost the culture of research and development to enhance quality of fresh mangoes and explore production of mango-based products.

To unlock Bangladesh's full mango export potential, a **coordinated and collaborative strategic roadmap** is essential. By adopting the strategic initiatives through a collaborative effort from both public and private stakeholders, Bangladesh will gain the capability to overcome existing challenges and significantly boost its mango export performance, securing a stronger and more sustainable foothold in the global market.

References

1. FAO. (2024). Major tropical fruits market review 2023.
2. FAO. (2024). Global Prospects For Major Tropical Fruits.
3. Tridge. (2023). Mango import data. Retrieved May 16, 2025
4. FAO. (2023). Major tropical fruits market review 2023.
5. Red Rickshaw Mangoes. (n.d.). Red Rickshaw Mangoes. *https://www.redrickshaw.com/collections/mangoes*
6. Variety Foods UK. (n.d.). Alphonso & Kesar Mango Box.
7. Alphonso Mango UK. (n.d.). Alphonso Mango UK. *https://alphonsomango.co.uk*
8. Shoperies. (2025). Alphonso Mango Box – Pre Order. *https://www.shoperies.com/pd/alphonso-mango-box-pre-order/2488/7*
9. Jamoona. (2025). Fresh Indian & Pakistani Mangoes.
10. Jurassic Fruit. (2025). Mango Chaunsa BA – 1kg.
11. IFB Market. (2025). Pakistani Mangoes. *https://www.ifbmarket.com/pakistani-mangoes*
12. Goodhill Farms. (2025). Thai Honey Mango (Nam Doc Mai). *https://shop.goodhillfarms.com/products/thai-honey-mango*
13. The Daily Star. (2023, Jul 21). Amrapali mango production highest among all varieties.
14. DAE. (2023). Final report: Exportable Mango Production Project (EMAP).
15. The Business Standard. (2024, Jul 15). Souring the sweet taste of mango export.
16. The Business Standard. (2025, April 19th). Bangladesh sees China as new mango export frontier.
17. EPB. (2025). Export Data.
18. Ahmed, M. A., Chowdhury, A. T., Mohib, A. A., & Hossain, M. F. (2019). Value chain analysis of mango in Bangladesh. AIUB Journal of Business and Economics, 16(1), 1–14.
19. LightCastle Analytics
20. Kok, M. G., Soethoudt, J. M., Vernooij, D. M., & Hetterscheid, S. (2021). Analysis of the mango value chain in Bangladesh: Towards a strategic action agenda for the Dhaka city corporations (Report No. 2215). Wageningen Food & Biobased Research
21. Chowdhury, R. (2019). Effect of postharvest storage temperatures and biopreservatives on quality of mango [Master's thesis, Sher-e-Bangla Agricultural University]. SAU Library.
22. Sher-E-Bangla Agricultural University (2019). Effect Of Postharvest Storage Temperatures and Bio preservatives on Quality of Mango
23. Roy, R., & Rahman, M. A. (2022). Assessment of mango value chain in Bangladesh. SAARC Journal of Agriculture, 20(1), 227–238
24. Kok, M. G., Soethoudt, J. M., Vernooij, D. M., & Hetterscheid, S. (2021). Analysis of the mango value chain in Bangladesh: Towards a strategic action agenda for the Dhaka city corporations (Report No. 2215). Wageningen Food & Biobased Research.
25. Esguerra, E. B., & Rolle, R. (2018). Post-harvest management of mango for quality and safety assurance: Guidance for horticultural supply chain stakeholders. Food and Agriculture Organization of the United Nations
26. DAM. (2024). Market Entry Requirement: Exporting of Plants and Plant Products to EU, UK, US, Saudi Arab, Qatar, Japan, China, Malaysia, South Korea and India. Department of Agricultural Marketing.
27. The Daily Star. (2024, June 26). Ensure cold chain logistics to reduce $2.4bn post-harvest losses
28. FoodGACC. (2024). Regarding the Inspection and Quarantine Requirements for Mango from Bangladesh to China.
29. LightCastle Analytics

30. De La Cruz Medina, J., & García, H. S. (2002). MANGO: Post-harvest operations (D. Mejia & B. Lewis, Eds.). Instituto Tecnologico de Veracruz (ITVER) & Food and Agriculture Organization of the United Nations (FAO).

31. APEDA. (2023). APEDA Authorized General Laboratories List. Agricultural & Processed Food Products Export Development Authority, Government of India.

32. Embassy of India in USA. (2025). List of approved pack house for processing of Mangoes-USA. Embassy of India.

33. Chomchalow, N. (2006). Thai Mango Export: Thai Mango Export: A Slow A Slow-but but-Sustainable Development. International Tropical Fruits Network.

34. Animal and Plant Quarantine Agency. (2024). List of Registered Exporter Packinghouse and Orchard for Export of Fresh Mango Fruits to The Republic of Korea in 2023/2024. Animal and Plant Quarantine Agency, Government of the Republic of Korea.

35. BFSA. (2025). Labs and Tests. Bangladesh Food Safety Authority, Government of Bangladesh.

Annexure

Annex A: Methodology

To conduct this market analysis on the exportable mango value chain, LightCastle Partners followed the 4-step methodology to collect and triangulate the findings of this study.

To initiate the report, the team conducted an extensive literature review to grasp the mango export landscape. Additionally, the team did stakeholder mapping across the mango value chain to identify the relevant ecosystem actors, evaluating their roles, responsibilities, contributions, and influence, to be able to conduct 27 key informant interviews (KIIs) for enabling the collection of valuable insights. The insights shed light on the export landscape for mangoes, providing direct insights into new market access negotiations, operational bottlenecks, and the necessary infrastructure improvements, and the complex dynamics and requirements of international trade.

Following the stakeholder mapping, field visits were also conducted in different regions, including Rajshahi, Naogaon, and Chapainawabganj. These visits provided an in-depth overview of the complexities of agricultural practices, from planting to harvesting, and the challenges farmers face, such as weather variability and pest management.

This multi-pronged approach provided a holistic understanding, revealing not only the opportunities in the forward export market but also the systemic challenges and the collaborative efforts required to overcome them.

Annex B: Important Documents for Mango Production and Export

S/L	DOCUMENT	ISSUING AUTHORITY
01	Bangladesh Good Agricultural Practices Policy 2020	Ministry of Agriculture
02	Market Entry Requirement for Exporting of Plants and Plant Products to Selected Countries	Department of Agricultural Marketing
03	Process for Obtaining Phytosanitary Certificate	Department of Agriculture Extension
04	Frequently Asked Questions for the Export-Import of Plants and Plant Products in Bangladesh	Department of Agriculture Extension
05	Export Policy 2024-2027	Export Promotion Bureau
06	Export Cash Incentive	Bangladesh Bank
07	Process for Registration as Exporter of Horticultural Product	Plant Quarantine Wing and Ministry of Commerce
08	Registered Exporter System Implementation Guideline, 2019	Export Promotion Bureau (EPB)

Table A: Regulatory and Guiding Documents Relevant to Production and Export of Bangladeshi Mangoes

Annex C: Important Government Institutions for Mango Production and Export

ENTITY	DESCRIPTION	EMAIL ADDRESS
Department of Agricultural Extension	DAE is the principal public-sector agency providing agricultural extension services across Bangladesh. It delivers farmer training, promotes sustainable crop practices, enhances productivity, and facilitates technology transfer through regionally decentralized programs	info@dae.gov.bd
Plant Quarantine Wing	A specialized unit within the Department of Agricultural Extension is responsible for preventing the entry and spread of harmful plant pests and diseases through imported plants and plant products. It implements phytosanitary control measures at ports of entry, issues certificates for imports and exports, modernizes labs, and enforces the Plant Quarantine Act 2011 to protect Bangladesh's plant health and meet international trade standards	dpqw@dae.gov.bd
Horticulture Export Development Foundation	This government-backed foundation fosters the development, promotion, and export of high-value horticultural products. Through technical guidance, capacity-building, and support for packhouse and lab infrastructure, it aims to boost national agribusiness and farmer incomes.	hortex@hortex.org

ENTITY	DESCRIPTION	EMAIL ADDRESS
Central Pack House	Managed under Shampur's local DAE office, this facility supports the export readiness of fresh vegetables and fruits by offering inspection, packaging, and processing services. The Central Pack House aids farmers and exporters in maintaining quality standards required for both domestic and international markets	ddcphpqcshampur@gmail.com
Bangladesh Standards and Testing Institution	BSTI is the national standards body of Bangladesh, operating under the Ministry of Industries. It is responsible for formulating national standards, certifying products, testing goods, and regulating weights and measures. BSTI enforces quality control through inspections, mobile courts, and mandatory certification for selected products. It also represents Bangladesh in international standards organizations like ISO and IEC. Its core goal is to ensure consumer safety, promote fair trade, and support industrial development through standardization and quality assurance.	dg@bsti.gov.bd
Bangladesh Agricultural University	BAU offers undergraduate to PhD programs across six faculties and 45 departments. It focuses on education, research, and innovation in agriculture, fisheries, livestock, and food production, contributing significantly to national development	registrar@bau.edu.bd

ENTITY	DESCRIPTION	EMAIL ADDRESS
Sher-e-Bangla Agricultural University	SAU is one of the oldest agricultural institutions in South Asia. Based in Dhaka, it contributes to research and development in agriculture, technology transfer, and crop diversification, and offers undergraduate to doctoral degrees across multiple faculties and departments	info@sau.edu.bd

Table B: Relevant Institutions for Production and Export of Bangladeshi Mangoes

Annex D: Important Licenses and Processes to Enter the Mango Export Ecosystem

S/L	DESCRIPTION	EMAIL ADDRESS	FEE	TIME	COMMENTS
01	Trade License	City Corporation/ Union Parishad/ Municipality	8,000-12,000	3-7 days	Business Type: Export & Supplier
02	TIN	NBR	FREE	10 Min	
03	Current Bank Account	AD Branch (Any Bank)	****	2-3 days	
04	Membership of a chamber of commerce/ Relevant association	Listed chamber of commerce/ Association	500-40,000	2-7 days/ 2-3 months	
05	ERC	CCI&E	8,000 (+15%V AT)	3-7 days	

S/L	DESCRIPTION	EMAIL ADDRESS	FEE	TIME	COMMENTS
06	BIN	NBR	FREE	1-30 days	
07	Membership of BFVAPEA	Bangladesh Fruits, Vegetables & Allied Products Exporters' Association	10,000+ 500+ Others	7-180 days	For fruits & vegetable export
08	Horticultural Products Exporter Registration	Plant Quarantine Wing, DAE	FREE	3-90 days	Optional (Only fruits & vegetable export to Europe)
09	EPB Enrolment	EPB	2,300 + Others	7-10 days	For non-textile exporter
10	REX Registration	EU & EPB	FREE	2-3 days	For EU shipment
11	Application Shyampur Packing House	Plant Quarantine Wing, DAE	FREE	1 day	For EU shipment
ADDITIONAL					
12	Membership of BAPA	Bangladesh Agro- Processors' Association (BAPA	30,000	7-180 day	For processed food export
13	BSTI, HALAL & Others	***	***	***	As required

Table C: Relevant License and Legal Documents Checklists for Production and Export of Bangladeshi Mangoes

Annex E: List of Interviewed Entities for Development of the Report

S/L	ORGANIZATION/REGION
01	A.R. Malik Seeds Private Limited
02	Bangladesh Agricultural University
03	Bangladesh Fruits, Vegetables and Allied Products Exporters Association
04	Central Pack House
05	DAE District Office
06	Exportable Mango Production Project
07	Farmers and Exporters from Rajshahi, Chapainawabganj and Naogaon
08	Horticulture Export Development Foundation
09	Matrix Business Development Limited
10	Sher-e-Bangla Agriculture University
11	Solidaridad
12	Sustainable Agriculture Solution

Table D: List of Interviewed Entities

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