Reviving Exports of Jute Products from Bangladesh

A study prepared as part of the BEI project on Trade and Investment

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Executive Summary

Traditionally labelled as 'golden fibre', jute used to be the most important source of foreign exchange for Bangladesh until the mid-1980s. Despite being the second largest (after India) jute producer in the world, Bangladesh is the most dominant exporter of jute fibre and manufactured products (63 per cent of global exports in 2018). The international market of jute items has, however, been declining amid the much talked about promising export prospects of environment-friendly products. Despite the current low relative significance of jute exports, recent innovations (such as discovering genome sequence, enabling the production of high quality and time-appropriate fibre, and the potential of producing commercially viable biodegradable substitutes from jute for polythene or plastic-based products) are expected to bring dynamism in the sector in which Bangladesh has traditionally enjoyed strong comparative advantage.

Exports of Jute from Bangladesh: Products and Destinations

The demand for jute products in the global market has witnessed a fluctuating trend for several decades now. In 2018, the global exports saw a massive decline of 23 per cent and the total export receipts amounted to just about US$ 1.17 billion. Bangladesh supplies most of the jute products to the international market with its largest export destination being India. The sharp export decline in 2018 is mainly attributed to the imposition of anti-dumping duties by India on Bangladesh's jute products.

The global export of jute is heavily concentrated in a narrow range of products under four broad categories, viz. jute and other textile bast fibres, raw or processed, but not spun; tow and waste of such fibres (HS code 5303); yarn of jute or of other textile bast fibres (HS code 5307); woven fabrics of jute or of other textile bast fibres (HS code 5310); and sacks and bags, for the packing of goods, of jute or other textile bast fibres (HS code 630510). Among them, products under HS code 5307 had the highest share in world exports in 2018 (44 per cent); followed by the products under HS code 630510 (23.3 per cent); products within HS code 5310 (17.6 per cent); and HS code 5303 (15.04 per cent). Jute is exported to 136 countries and territories. About a quarter of all export demand comes from Turkey, which is followed by India (16 per cent of all jute exports), and China (13 per cent). Other relatively small destinations (in ascending order of export earnings) are Pakistan, Sudan, Egypt, Iran, Indonesia, Uzbekistan and the USA. About 62 per cent of jute's export receipts come from the top five countries. While Asian countries account for almost 70 per cent of Bangladesh's jute export earnings, countries in Africa are the second largest source of demand, capturing nearly 18 per cent of exports.

Potential of New Products in Jute Exports

Diversifying jute fabrics through blending with textiles

Since the demand for natural fibre blends has increased in recent years, the use of jute and other natural fibres that can be blended with cotton is also on the rise. However, there is a need to move jute's profile to blend it with the textile and clothing (T&C) industry. In recent times, the T&C sector is using jute in many higher-end textiles for furnishings as well as in composites, especially as wood fibre. The major blended jute manufactured products would be yarn and twine, jute sacking, hessian, carpet backing cloth and other T&C products. This kind of blending of jute and textiles has opened up a new horizon for the future of jute, even though such diversified jute products currently remain a small proportion of total consumption. If denim fabrics, for example, is produced with half jute and half cotton, a pair of jeans could cost only one-third of the cost of full cotton denim pants. To realise such enormous potential, there is a need for increased investment and incentives for developing expertise, promoting innovation and fostering design, branding and marketing activities.

Using jute sticks for charcoal and carbon powder

A game-changer in jute exports can be jute-sticks, which is one of the by-products of jute. There is a significant global demand for jute-stick ashes because these are used as a raw material in many industries, such as cartridge of printers, charcoal and cosmetics. High-quality jute-stick ashes can be used to produce tooth-hygiene products, antitoxin drugs, carbon paper, dry-cell batteries, dried ink of photocopier machines and other chemicals. Currently, Bangladesh is exporting charcoal only to the UK, Saudi Arabia and Taiwan. Taking advantage of the duty-free market access, charcoal exports to China can be substantially increased. There is also considerable demand for jute-stick charcoal and ashes/dust powder in Brazil, Germany, Hong Kong, Japan, Malaysia, Turkey, the US and the UAE.

Interior supplies for global automobile industry

Recently, global car giants such as Audi, BMW, Daimler Chrysler, Ford, Mercedes-Benz, Mitsubishi, Renault, Toyota, and Volvo have started using natural fibre for furnishing car interior. It has opened up a big avenue for jute goods manufacturers to be integrated within the relevant global value chain of the automobile sector. The global car industry annually requires nearly 100,000 tonnes of jute, but Bangladesh exports only 12,000 tonnes for them. Therefore, the country has an opportunity to become a dominant source of supplier for the global automobile industry. In light of the rising global market for green and climate-sensitive products, this should be an area of great export interest to Bangladesh.

Potential of Sonali Bag

The demand for biodegradable shopping bags has grown significantly over the past years because of increasing concern and awareness about environmental issues. In this respect, the global market of jute bags is projected to reach a value of $2.6 billion by 2022. Sonali Bag, a type of jute polybag, can emerge

as an export item of significant interest in the future. This bag is a biodegradable, and environment and human health-friendly product since it is produced from jute cellulose. It is reusable and recyclable. The world bioplastics market is estimated to grow to $66 billion in 2022, as Europe and North America are expected to make a transition and shift towards biodegradable packaging. The European Union explicitly aims to reduce overall consumption of single use plastics which means there is a great opportunity for promoting export of Sonali bags.

Jute-Tin

An important addition in the family of diversified jute products has been environment-friendly 'Jute-Tin', which should serve both domestic and international markets. Instead of using lead and zinc, core raw materials used in producing CI sheet (tin), the long-lasting jute-made tin is a recent invention of a Bangladeshi scientist Mubarak Ahmad Khan (the inventor of jute polybag). This invented tin is made of jute hessian, resin, coupling agent and some hardener. Jute-tin is sound- and heat-proof. And it can save nearly all import cost of raw materials for producing metal sheets. It is a biodegradable product that can be used to make furniture and home interior and exterior as well as sheds. It can also be used as alternatives to plastic and wood.

Jute leaf tea

Bangladeshi scientists have recently discovered a long-lost recipe of herbal drink made from jute leaves. It is perceived that this drink would gain popularity across the globe. The Bangladesh Jute Research Institute (BJRI) has shared the recreated recipe of the drink with the Jute Diversification Promotion Centre (JDPC). Warsi Aquatech Ltd, a Bangladeshi firm, with interest in commercial production of herbal drinks, has already produced an organic green tea based on the BJRI recipe. A BSTI lab test report on the product has also been received. An initial export shipment has been sent to Germany on a trial basis.

Jute viscose

Regenerated cellulose fibre (viscose) is a popular man-made fibre, which is made from the chemical-induced transformation of natural polymers and used as a basic input of fabrics. Every year Bangladesh spends a considerable amount of money to import viscose fibres for the textile industry. Recently China has offered technology and finance to Bangladesh for constructing a plant to produce viscose fibre from jute. Afterwards, a document was signed by BJMC and China's Textile Industrial Corporation for Foreign Economic and Technical Corporation to initiate the jute viscose project. In addition, a team of experts from Bangladesh has visited some carbon/charcoal-based viscose plants in China. After the implementation of the project, Bangladesh can produce 40,000 tons of viscose annually, which will help to keep the import of cotton less than 200,000 bales each year. Among other uses, jute cellulose can be used to make medicine peels. It is also a cheaper substitute of wood. Therefore, both jute viscose and other products from jute cellulose have potential to become important export items in the future.

Jute geotextile

Jute geotextiles (JGT) can be important product sub-category in jute exports because of their extensive use in civil engineering, foundation, soil, rock, earth, or any other geotechnical engineering material in man-made project, structure or system. JGTs have emerged as a commercially and ecologically viable alternatives to synthetic geotextiles which are harmful for the environment. JGTs are biodegradable, photodegradable, compatible with soil, harmless for fish/plants/microbes/eggs, etc. JGTs meshes with the soil and act as a fertiliser after a certain period. Bangladesh is considered to have great potential to earn significantly higher amount of foreign currency by exporting JGTs produced with the existing supply of jute fibre.

Policy Recommendations

Bangladesh Jute Mills Corporation (BJMC), the public corporation established to cater the needs in the jute market of the early-1970s, is still the largest state-owned manufacturing and exporting entity in the global jute sector. However, it is burdened with administrative inefficiency, age-old machines, low productivity, financial troubles and operating losses. It produces traditional jute products that are experiencing a sharp decline in the international demand. A reason of its continued loss is to purchase raw jute at a much higher price than the wholesale price. To overcome these problems, the mills need rapid modernisation to significantly reduce production costs and to improve their productivity in the items in which they have already developed specialization. There is also the need to think about revamping the current administrative apparatus to address the existing revenue situations. For that to happen, jute specialists, executives from export-oriented sectors and managers from private industries should be accommodated to overhaul BJMC. An endowment fund may be introduced to promote research, innovation, machinery up-gradation for increasing jute exports. Finally, a comprehensive strategy must be formulated to revive the organisation with concrete a work plan and result-oriented management system.

Introducing new products in the export basket is a must. This should include, among others, bags, jewellery/ jewellery box, particle board, floor covering, toilet wear, sanitary products, fabrics, wall covering and curtain, bed accessories, seats, blanket and other non-conventional covering for office. Recently global car giants, such as Audi, BMW, Chrysler, Daimler, Ford, Mercedes-Benz, Mitsubishi, Renault, Toyota and Volvo have started using natural fibres for furnishing car interior. It has opened up a promising avenue for jute to be integrated with the global value chain of the automobile sector. The global car industry annually requires nearly 100,000 tonnes of jute, but Bangladesh exports only 12,000 tonnes for them. However, the country has the potential to become the major supplier of jute to the global automobile industry and earn $5-7 billion per annum if it can successfully capture the global market. Capturing more of the major importing markets (e.g. like China, the USA) will require innovation and focused approach to meet the specific demands of the targeted markets.

Over the past couple of years, some new jute products have been invented. However, these products are yet to go through several rounds of piloting to assess their commercial viability. Sonali bag and jute viscose are some of these products which have enormous potential in both domestic and international markets, even though their unit prices at pilot stage are still significantly higher than that of their nearest substitutes. To make these commercially viable, domestic private investment and foreign direct investment can be encouraged. For domestic investors, special scheme with soft term loans can be introduced by Bangladesh Bank to reduce the cost of machineries and other fixed costs. The BJMC can also collaborate with these investors to develop production units in its own land. For foreign investment, facilities can be created in the Special Economic Zones (SEZs) for establishing factories. These support measures are expected to reduce the initial cost of production significantly and make them commercially viable.

The international market of jute items should no longer be perceived as a 'captive market' for Bangladesh. In order to significantly increase the export earnings from this sector, the country must invest in innovations and market linkages. There have been some major scientific inventions and innovation of new products. All stakeholders including BJMC, the private sector, the BJRI and other research institutes (including Atomic Energy Commission), universities (agricultural universities, universities of science and technology, and relevant departments of top universities) and around 200 jute mills in the private sector should be actively involved in innovation and product diversification. Providing appropriate incentives as well as establishing an endowment fund for innovation and diversification should comprise options for incentivising product development and marketing. Budgetary support measures can be directed to public-private partnership projects for promoting research and development that can contribute significantly to export earnings from jute products.

In Bangladesh, most of the Jute Geo-Textile (JGTs) products are considered inferior in nature. But they can be treated and mixed with other eco-friendly inputs to develop hybrid and high-end materials for construction. Currently more than ten types of JGTs are globally marketed through Alibaba. But these are basic products and unlikely to find viable markets in developed countries. Bangladesh cannot move forward to earn notable amount of foreign currency and secure its position in the expanding global market of geotextiles and technical textiles without developing superior products of JGTs. Doing so requires innovation, standardisation and product promotion. JGTs must be improved through chemical treatment and standardisation according to the purpose of use and aiming at diversified needs of the global market. Vis-à-vis India, Bangladesh should also look for investment, and support in standardization and marketing from interested countries, such as China. New technologies should be installed in jute mills to produce improved JGTs to capture the global market.

Attracting foreign direct investment (FDI) can help address the key constraints regarding quality improvement, technology adaptation, standardization, advertisement and promotion, research & development (R&D), and greater market access of jute products in the global market. New and high-end

products (such as jute viscose) should be opened up for foreign investments in order to maintain global standard and access to export markets of industrial inputs, construction sector, disaster management, and general consumers, which would significantly help to rejuvenate the 'golden fibre' and increase export earnings further. Creating a special fund with low interest and soft term loans would be another financing option to promote new and promising products. In this context, existing support measures could be strengthened with lenient credit terms.

Chapter 1: Introduction

Jute is cultivated mainly in the Bengal Delta, most of which is occupied by Bangladesh. Jute fibres are extracted from jute plants through retting, stripping, washing and drying. For further manufacturing purposes, jute fibres can be bleached or dyed. Jute is the second-most used vegetable fibre after cotton across the world. It is fully natural biodegradable and compostable fibre. Jute products are considered to address emerging environmental and ecological concerns at a global level, especially in the developed countries as more countries adopt environment-friendly products. Traditionally, Bangladesh's jute is labelled as 'golden fibre' in textbooks and policy documents for at least three decades after the 1970s. Till the late 1980s, Jute exports from Bangladesh used to fetch the highest amount of foreign currency. Because of the quality of jute fibres produced in the country is considered to be the best in the world for which it dominates the international market.

Globally, India, Bangladesh and China are the top three producers of jute (Table 1.1). Bangladesh is the second-largest producer of jute fibre in the world after India. However, Bangladesh is the biggest global exporter of jute products (fibres and manufactured items) with a 63 per cent share in 2018. Despite being the largest jute producer, India's share in the global jute market was about 19.8 per cent in 2018 which has been gradually increasing in recent times. Another jute exporter is Nepal which had 4.2 per cent share in the global market in 2018. China's position in the international jute market has been less than 1 per cent.

The Jat Area, located in Bangladesh, is popular for highest quality of jute fibre.[1] This area enables the country to supply the highest quality of jute fibre in the world. However, because of slow adaptation to technologies and innovations, Bangladesh could not realise the full potential of the global jute market. On the other hand, India has adopted improved techniques that helped it to become the largest producer of jute fibre in the world. India is also the world's largest consumer of jute products (World Jute, n.d.). India's national law to use jute for packaging is considered to be as one of the major driving factors behind this extensive use of jute products.

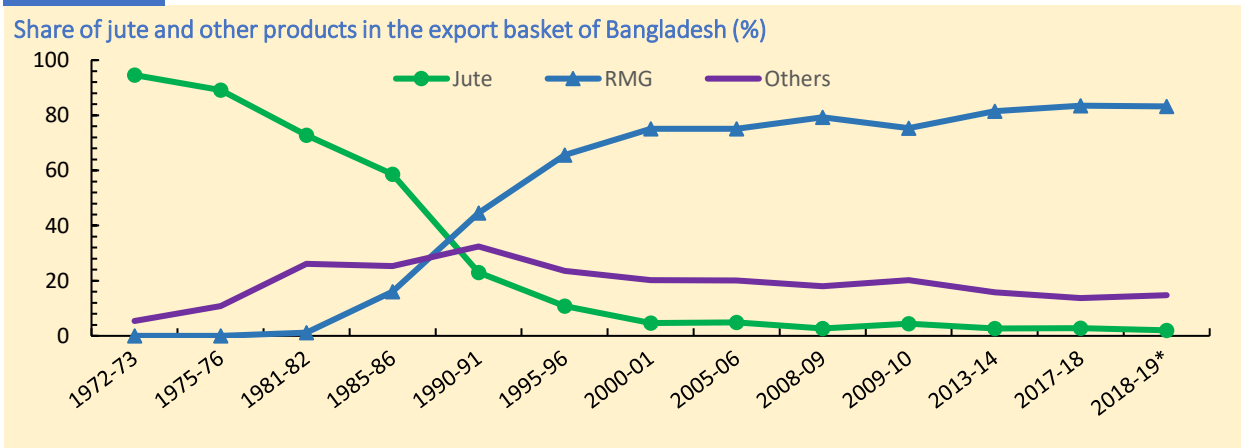
[1] Jat Area is a term of Jute cultivation that indicates the inner North-Eastern part of Bangladesh. This geographical area comprises part of the districts of Dhaka, Mymensingh, Tangail, and Cumilla, which receives fresh deposit of silts every year.

Table 1. 1 Top jute producing countries in the world

Country	Annual Production ('000' Tonnes)
India	1,968
Bangladesh	1,349
China	29.6
Uzbekistan	20
Nepal	14.9
South Sudan	3.3
Zimbabwe	2.5
Egypt	2.5
Brazil	1.2
Vietnam	1

Source: World Atlas (WorldAtlas, 2019)

Figure 1. 1



*Projection based on the data of June 2018-April 2019.

Source: Based on data from the Export Promotion Bureau (EPB) of Bangladesh.

In the 1970s, jute (raw and manufactured) dominated the export basket of Bangladesh, which declined sharply in the late-1980s while readymade garments (RMGs) export increased gradually. Export earnings from jute products became minor since the early-2000s and continued to remain as one of the lowest export categories in the subsequent years (Figure 1.1). While other important products, such as RMGs, textiles, fish and plastics demonstrated notable growth in terms of export earnings, value of jute exports did not show promising trends over the last two decades, even though the country has been the top jute

exporter with nearly a two-thirds share in the international market. It could not do well despite its considerable prospect as a strong alternative to plastic and artificial fibres amid the growing concern of massive environmental pollution and global climate change. A stagnant and low-lying export performance of jute products continued despite recent development in innovations, such as discovering genome sequence of jute, fine fabrics, cotton fibre for medical care, tea of jute leaves and biodegradable polythene from jute. Most of these innovations are yet to become commercially viable to open up new avenues of exports in the global market.

Against this backdrop, the present paper aims at conducting an in-depth analysis of the trend of export of jute products from Bangladesh vis-à-vis other exporters. It also analyses the market by product, export destinations, market concentration and prospect for diversification and increasing export earnings. In doing so, the paper has been organised as follows. After this brief introduction, Section 2 analyses the recent trend of jute exports by products and destination by geographical coverage. Section 3 discusses the dynamics of these exports and prospect for market diversification. Section 4 highlights the potential of jute exports and presents some new high-end products that have considerable export potential. Section 5 provides a discussion on the possible avenues of intervention. Finally, Section 6 concludes the paper.

Chapter 2: Exports of Jute from Bangladesh by Products and Destinations

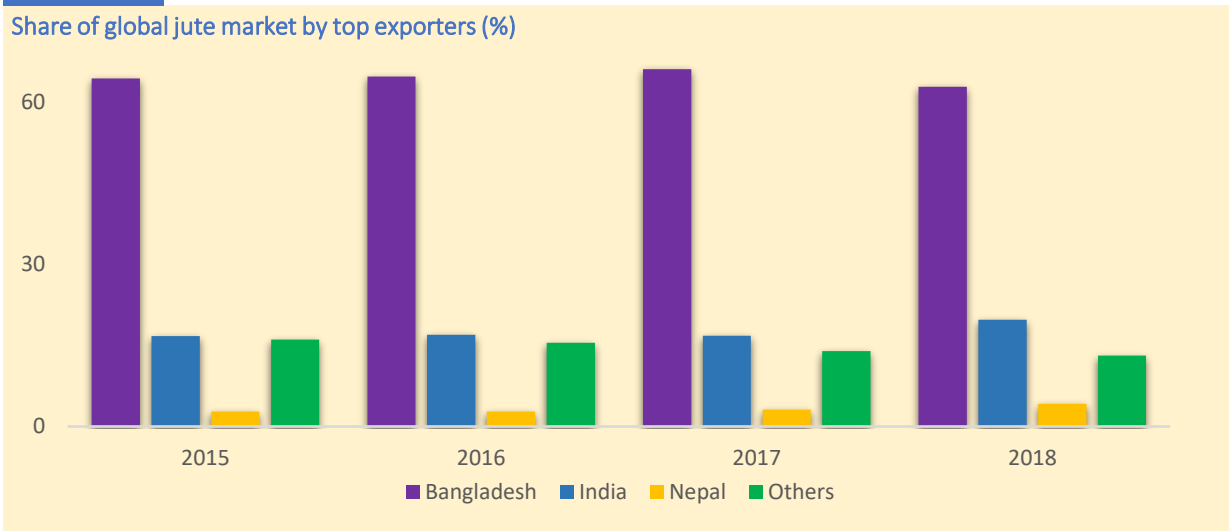
2.1 Trend of exports by product

According to the International Trade Centre's Trade Map database (2019)[2], the global export of jute products has witnessed a fluctuating trend over the last four years. In 2015, the global jute export was $1.18 billion, which registered a positive growth of 12.3 per cent in 2016, and such a positive trend continued up to 2017. However, in 2018, with an unusual decline of 23 per cent (from 2017), the total jute export came down to just about $1.17 billion, which was even lower than that of 2015. Since Bangladesh supplies most of the jute products to the international market and while India, being the largest export destination of Bangladesh, this sharp decline may be attributed to the imposition of anti-dumping duty by India on Bangladesh's jute products that led to a significant reduction of the country's all jute product exports in the Indian market.

In terms of the Harmonized System (HS) of classification, the global exports of jute is heavily concentrated on a narrow range of products under four broad categories viz. jute and other textile bast fibres, raw or processed, but not spun; tow and waste of such fibres (HS code 5303); yarn of jute or of other textile bast fibres of heading 5303 (HS code 5307); woven fabrics of jute or of other textile bast fibres of the heading 5303 (HS code 5310); and sacks and bags, for the packing of goods, of jute or other textile bast fibres of heading 5303 (HS code 630510). Among these, products under HS code 5307 had the highest share in world exports in 2018 (44%); followed by the products under HS code 630510 with a share of 23.3 per cent; HS code 5310 with a share of 17.6 per cent; and HS code 5303 with the lowest share of 15.04 per cent. Of the total exports of jute products, Bangladesh had the highest share in world exports of the products under HS codes 5303, 5307, and 5310 with the share in global exports of 11.5, 40.6, and 6.7 per cent, respectively. In contrast, Bangladesh had a 4.1 per cent share in the global exports of products under HS code 630510, and it is the second largest after India. Thus, even though India had 10.7 per cent share in these products' exports, it had a very low share in the global exports of other jute products in 2018. As a result, although India was the highest producer of jute in the world, its total share was less than one-fifth of the world exports of jute products.

[2] https://www.trademap.org

Figure 2. 1



Source: Authors' presentation based on ITC data.

Bangladesh's export earnings from jute products has been fluctuating for nearly a decade. Its share in total exports of goods has been very low, which ranged from 2.65 to 2.79 per cent from 2013-14 to 2017-18. It is expected to decline further in 2018-19 to a record low — only 2.01 per cent. It implies that Bangladesh's jute products have been losing importance in the international market. On the other hand, its value of exports has been ranging from nearly $8 to $10 billion since 2010-11.

Table 2. 1 Trend of jute exports (million $)

	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19*
Jute	1,071.28	950.43	1,020.36	798.96	865.57	913.78	961.62	1,023.07	832.15
Total (Goods)	22,928.2	24,302.00	27,027.45	30,186.62	31,208.95	34,257.18	34,655.90	36,668.20	41,204.02
Jute (% of total)	4.67	3.91	3.78	2.65	2.77	2.67	2.77	2.79	2.01

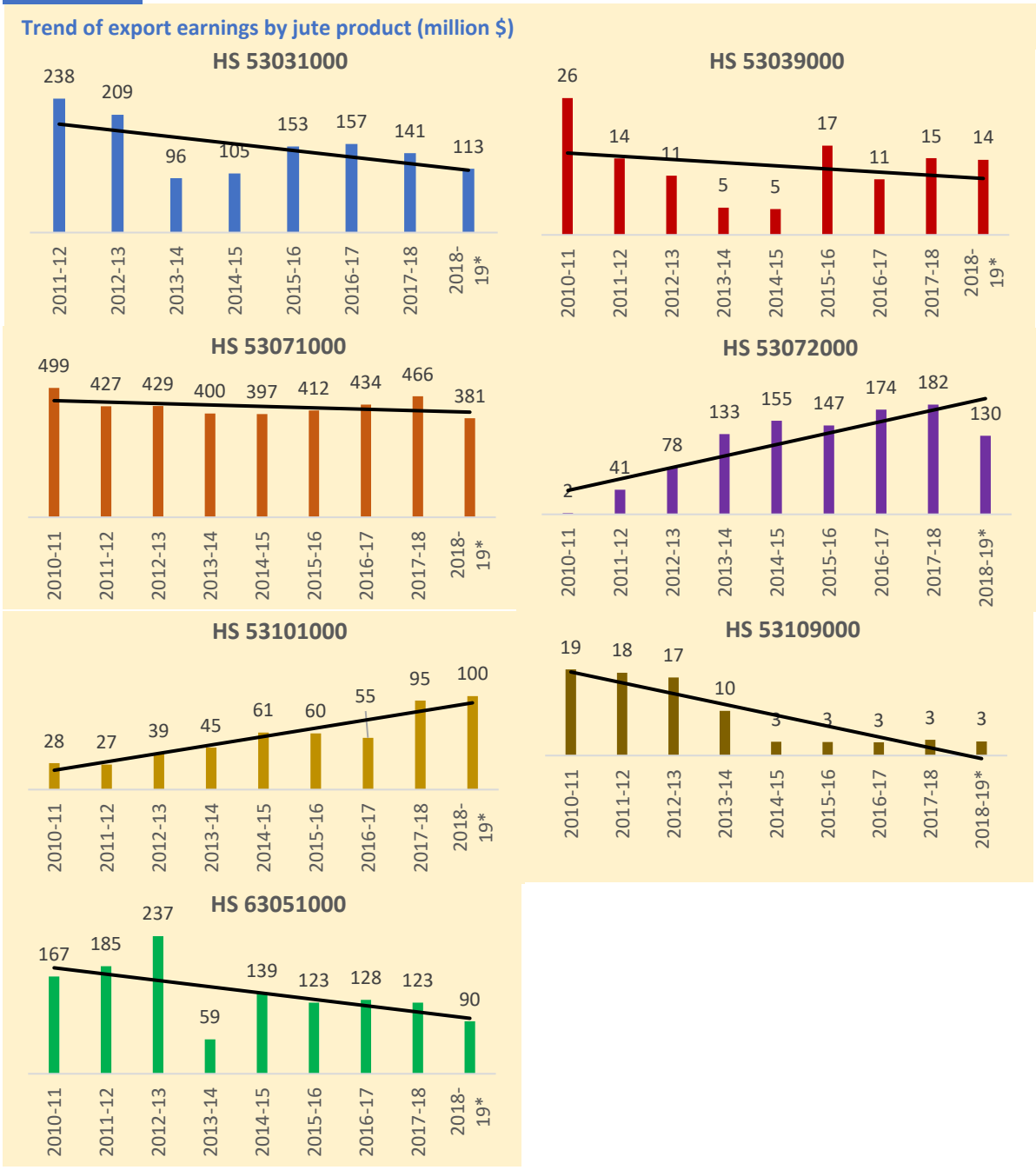
* Projection based on July 2018-March 2019 data.

Source: Based on data from Bangladesh Bank and EPB data.

Figure 2.2 summarizes trends of Bangladesh's export earnings for various jute products at the HS 8-digit level. An analysis of the trend of exports by products reveals that the largest export receipts from all jute products come from single yarn of jute or of other textile bast fibres of 53.03 (HS 53071000). The export earnings was $466 million (45.5 per cent of total jute exports) in 2017-18. However, its export earnings demonstrate fluctuating but a generally stable trend over time. The second largest export receipt of jute

products come from multiple (folded) of cabled yarn of jute (HS 53072000). In 2017-18 its export value was $182 million, and it showed a steadily increasing trend — from merely 0.3 per cent in 2010-11 to 17.8 per cent share of the total jute exports in 2017-18. The third largest product is jute and other textiles bast fibres, raw or retted (HS 53031000) but it has been showing a declining trend. In 2017-18 the export earnings from this product was $141 million. During 2011-12 to 2017-18, the share of these products in the total jute exports declined to 13.9 per cent from 25 per cent.

Figure 2. 2



* Projection based on July 2018-March 2019 data.

Source: Authors' calculation based on EPB data.

Table 2. 2 Jute exports by product under HS 8-digit codes (% of total jute exports)

HS Code	Product Name	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19*
53031000	Jute and other textile bast fibres, raw or retted		25.03	20.51	12.89	12.13	16.72	16.36	13.90	13.61
53039000	Jute and other textile bast fibres, processed but not spun;[3]	3.50	1.52	1.10	0.69	0.57	1.85	1.10	1.62	1.71
53071000	Single yarn of jute or of other textile bast fibres of 53.03	67.32	44.98	42.01	53.48	45.91	45.04	45.14	45.47	45.81
53072000	Multiple (folded) of cabled yarn of jute	0.26	4.28	7.65	17.75	17.90	16.11	18.07	17.76	15.67
53101000	Unbleached woven fabrics of jute or of other textile bast fibre	3.79	2.81	3.80	5.99	7.03	6.56	5.74	8.82	11.99
53109000	Woven fabrics of jute or other textile bast fibres (excl. unbleached)	2.52	1.89	1.66	1.30	0.35	0.32	0.30	0.44	0.37
63051000	Sacks and bags, used for packing goods, of jute, etc.	22.61	19.49	23.27	7.90	16.11	13.41	13.26	11.87	10.84

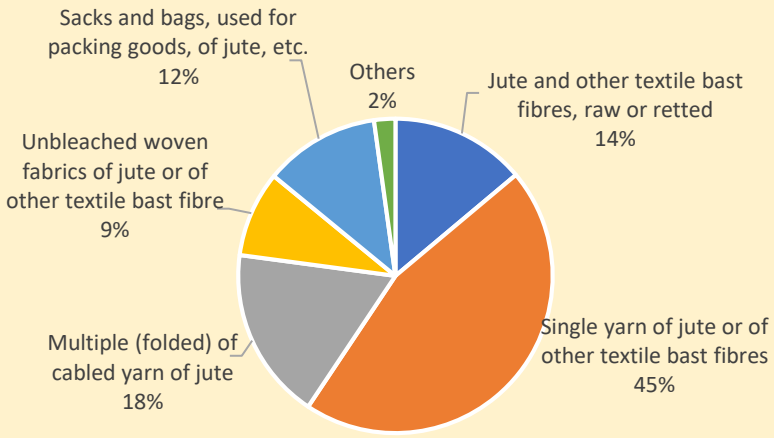
* Projection based on July 2018-March 2019 data.
Source: Authors' calculation based on EPB data.

Among other jute products, the fourth largest export earning product is sacks and bags, used for packing goods, of jute, etc. (HS 63051000) from which the earning was $123 million. It also continued to decline in the share of jute exports from 22.6 per cent in 2010-11 to 11.9 per cent in 2017-18. In contrast, unbleached woven fabrics of jute or of other textile bast fibre (HS 53101000) has been performing well with an increasing trend from 3.8 per cent in 2010-11 to 8.8 per cent in 2017-18. It is expected to hold 12 per cent share in the total jute exports in 2018-19. Nevertheless, the other two products (HS 53039000 and HS 53109000) have been earning meagre amounts from exports.

[3] The detail product name is Jute and other textile bast fibres, processed but not spun; tow and waste of such fibres, incl. yarn waste and garnetted stock (excl. retted fibres of this kind, flax, true hemp and ramie)

Figure 2. 3

Share of jute products in exports of jute, 2017-18



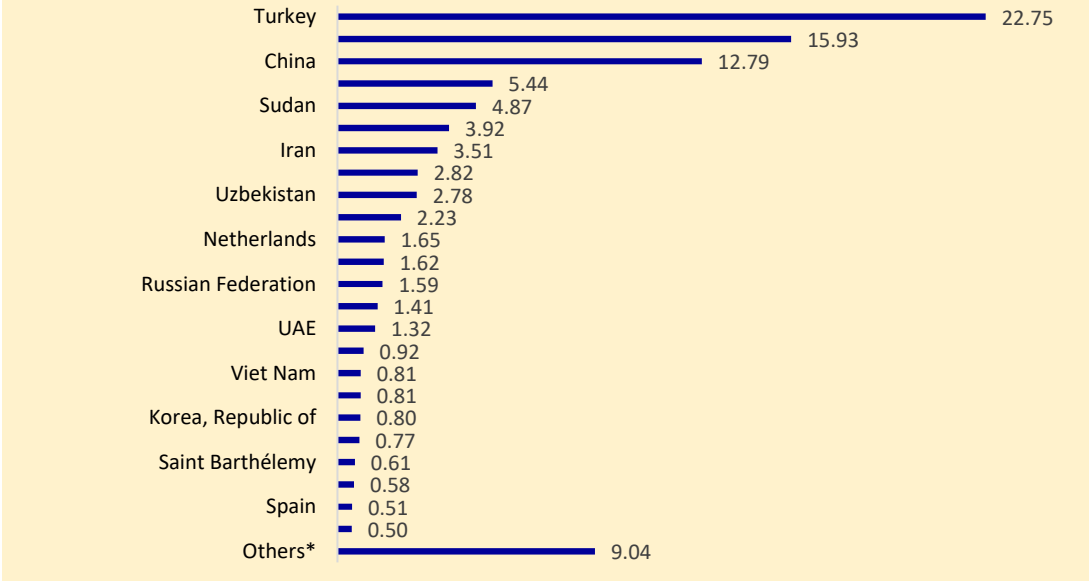
Source: Authors' presentation based on EPB data.

2.2 Geographical coverage

Bangladesh's jute is exported to 136 countries and territories of the world. At aggregate level, Turkey is the largest export destination capturing 22.75 per cent of Bangladesh's jute exports followed by India (15.93%), China (12.79%), Pakistan (5.44%), Sudan (4.87%). About 62 per cent of the export earnings from jute come from the top five countries.

Figure 2. 4

Bangladesh's jute export destinations, 2017-18



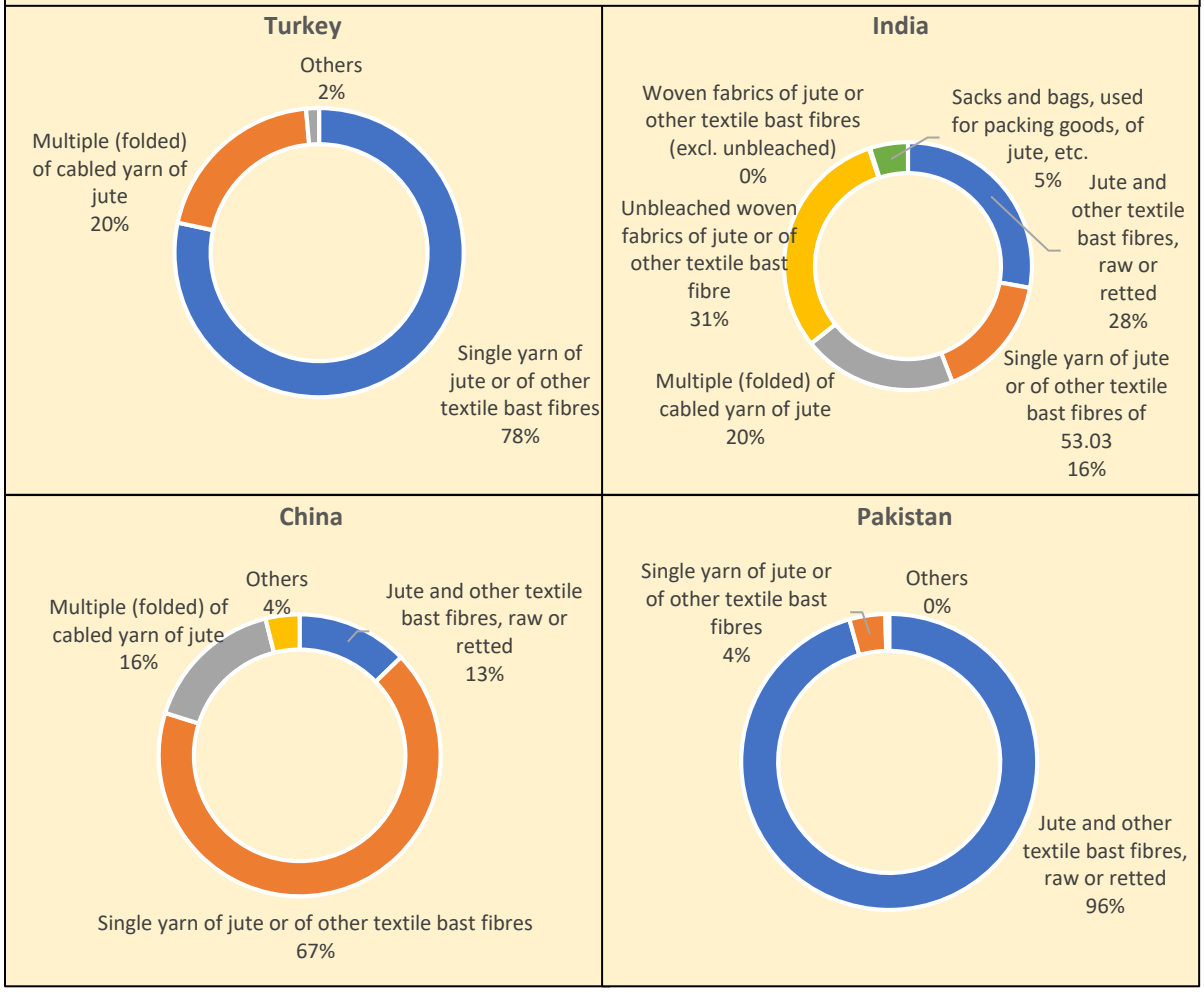
Note: Others include 112 countries or territories.

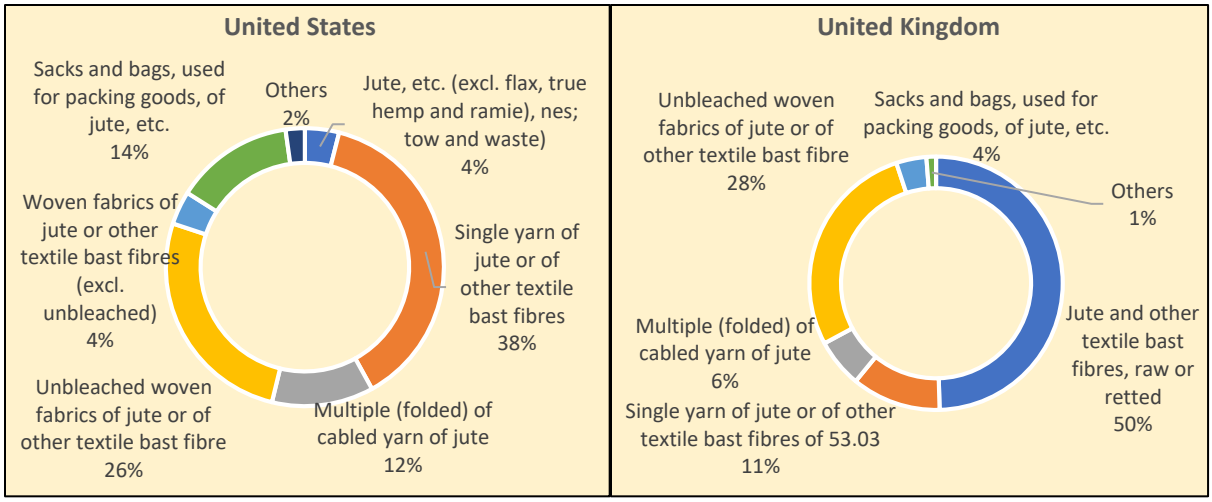
Source: Calculated from EPB database.

Among the major destinations, Turkey mainly imports single yarn of jute or of other textile bast fibres (HS code 53071000), followed by multiple (folded) of cabled yarn of jute (HS code 53072000) from Bangladesh. These two products constitute 63 per cent of the total export earnings from all destinations. In contrast, Bangladesh exports diversified jute products to India. The Chinese market is dominated by single yarn of jute, followed by multiple (folded) of cabled yarn of jute and raw jute fibres exports from Bangladesh, while 96 per cent export to Pakistan is jute. The USA is the only developed country among the top ten destinations. Although Bangladesh exports all types of jute products to the USA, the country has only managed to send 2.23 per cent of its jute exports to the USA.

Figure 2. 5

Composition of products in selected destinations, 2017-18 (%)





Source: Based on calculation from EPB data.

A changing pattern can be observed in terms of the most important export destinations of jute products over time (Table 2.3 and 2.4). In case of HS code 53031000, the largest destination remained Pakistan from 2013-14 to 2018-19. However, the second largest destination was China in 2013-14, which was overtaken by India in 2018-19. For products under HS code 53039000, India remained the largest destination while China has become the second largest destination in 2018-19 in place of Russia. In case of HS code 53071000, although China was the topmost export destination in 2013-14, Turkey gained the status surpassing China in 2018-19. On the contrary, for products under HS code 53072000, Turkey and Indonesia were the top two destinations in 2013-14. However, India replaced Indonesia as the second dominant importer while Turkey retained its position as the top importer in 2018-19. For products under HS code 53101000, the top and second largest destinations were Iran and India respectively in 2013-14. In 2018-19, India became the overwhelmingly dominating importer of this product from Bangladesh with about 60 per cent of Bangladesh's exports of this product, followed by the USA (about 6 per cent share). The USA and South Korea have taken the largest and the second largest position of destination in 2018-19 from Netherlands and Germany respectively for products under HS code 53109000. However, in 2018-19, the UAE and Sudan have overtaken the largest and the second largest position as top importers of the product from India and Indonesia respectively for products under HS code 63051000.

Table 2. 3 Export to top 10 destinations by product (8-Digit HS Code), 2013-14 (thousand $)

HS 53031000	121,208	HS 53039000	5,180	HS 53071000	400,029	HS 53072000	132,778	HS 53101000	44,814	HS 53109000	9,695	HS 63051000	110,049
Pakistan	37,919	India	2,816	China	67,339	Turkey	51,815	Iran	10,858	Netherlands	2,267	India	26,526
China	23,588	Russia	626	India	47,235	Indonesia	11,739	India	9,011	Germany	1,183	Indonesia	6,908
India	19,649	Pakistan	512	Iran	34,797	Iran	10,233	Egypt	4,560	USA	1,037	Belgium	4,980
Côte d'Ivoire	8,568	South Korea	302	Egypt	24,385	China	10,152	China	1,991	Australia	910	Netherlands	3,491
Russia	5,304	Syria	287	Belgium	6,485	Belgium	6,766	Korea	1,719	UK	820	Kenya	2,524
South Korea	2,803	China	263	Russia	6,049	Russia	6,507	Australia	1,666	Korea	810	Cameroon	1,641
Germany	2,419	Australia	121	Indonesia	4,299	Egypt	5,668	Turkey	1,251	India	689	Libyan	1,438
USA	2,419	Germany	96	Japan	3,734	Saudi Arabia	5,154	Syrian	1,002	Italy	410	Mexico	1,109
Brazil	1,894	Netherlands	64	Spain	2,920	Syria	3,860	New Zealand	645	Egypt	409	Nigeria	1,031
Viet Nam	1,890	UAE	35	Pakistan	2,662	Uzbekistan	2,537	Japan	639	New Zealand	311	France	986
Others	14,755	Others	58	Others	200,125	Others	18,347	Others	11,472	Others	849	Others	59,414

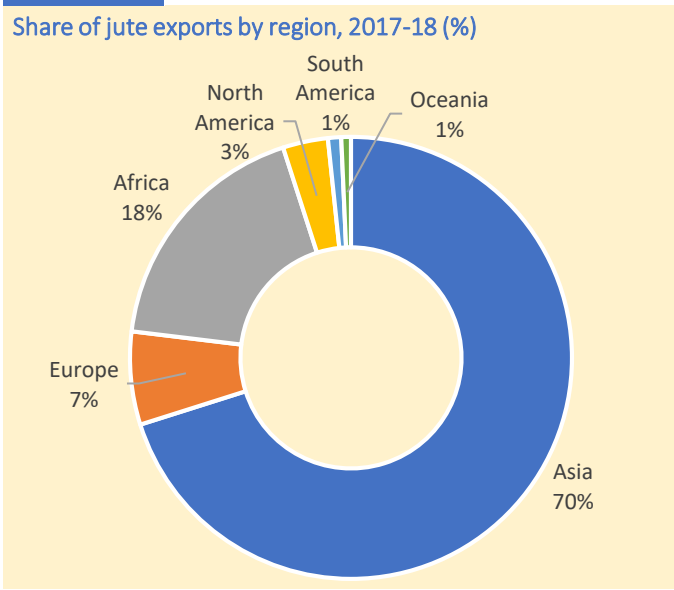
Table 2. 4 Export to top 10 destinations by product (8-Digit HS Code), 2018-19* (thousand $)

HS 53031000	113,264	HS 53039000	14,234	HS 53071000	381,214	HS 53072000	130,368	HS 53101000	99,757	HS 53109000	3,083	HS 63051000	90,237
Pakistan	41,301	India	4,670	Turkey	137,361	Turkey	32,602	India	60,233	USA	1,124	UAE	13,769
India	23,563	China	2,376	China	71,998	India	24,429	USA	6,059	South Korea	927	Sudan	12,800
China	15,338	Spain	2,372	India	28,544	China	20,518	UAE	4,194	Saint Barthélemy	243	Netherlands	8,547
Nepal	7,436	Germany	1,159	Egypt	25,117	Indonesia	10,955	Netherlands	4,020	Portugal	221	India	7,578
South Korea	3,913	Russia	1,001	Uzbekistan	18,133	Belgium	5,275	Iran	3,262	Japan	127	Indonesia	5,981
Brazil	3,654	Belgium	698	Iran	12,615	Saudi Arabia	4,620	Egypt	2,837	Turkey	98	Kenya	4,036
Côte d'Ivoire	3,299	Tunisia	689	Côte d'Ivoire	10,127	Russia	3,454	South Korea	2,697	Tunisia	70	USA	2,924
UK	2,754	USA	595	Russia	8,103	Jordan	3,419	Australia	2,389	Belgium	63	Viet Nam	2,634
Viet Nam	1,569	South Korea	207	UAE	7,673	Egypt	2,894	Japan	1,677	Gambia	55	Uganda	2,021
Djibouti	1,274	Japan	150	USA	7,015	Morocco	2,010	Turkey	1,674	Germany	28	Cameroon	1,815
Others	9,163	Others	316	Others	54,528	Others	20,192	Others	10,714	Others	125	Others	28,132

* Projection based on July 2018-March 2019 data.
Source: Authors' calculation based on EPB data.

From Bangladesh, 70 per cent of the jute products were exported to various Asian countries in 2017-18 (Figure 2.6). Among them, the largest export receipts came from Turkey (23%), which was followed by India (16%), China (13%), Pakistan (5.4%), Iran (3.5%), and Indonesia (2.8%). The second largest destination of Bangladesh's jute products was Africa where 18 per cent of these products were exported in the same fiscal year. The most important export destinations in this region was Sudan (4.87% of total jute exports), followed by Egypt (3.92%), Côte d'Ivoire (1.62%), and Tunisia (0.46%). The third largest destination was Europe with seven per cent share in the total jute exports. The notable countries in this region were the Netherlands (1.65%), Belgium (1.41%), Spain (0.51%), and the United Kingdom (0.5%). The share of the country's exports of jute to North America was only 3 per cent (2.23% in the United States) while it was 1 per cent each in South America (0.77% in Brazil) and Oceania (0.4% in Australia and 0.14% in New Zealand). Thus, even though jute products are being exported to countries around the world covering all the continents, the majority of jute exports is directed towards developing countries in Asia and Africa. Industrially developed and high-income countries are not significant recipients of Bangladeshi jute products.

Figure 2. 6



Source: Based on calculation from EPB database.

Detailed data on jute export are available at a broad product group level (HS 6-digit codes). However, data is not available at individual product level (HS 8-digit codes) in Export Promotion Bureau (EPB) of Bangladesh and International Trade Centre (ITC) trade map database. Therefore, export data and indices have been analysed at the HS 6-digit level. Available data on the ITC database indicates that there are seven product groups under which jute products are currently traded (Table 2.5). Bangladesh's share is about two-thirds in the aggregate jute exports in the world market and the country's position is second in two broad product categories (HS 531010 and HS630510).

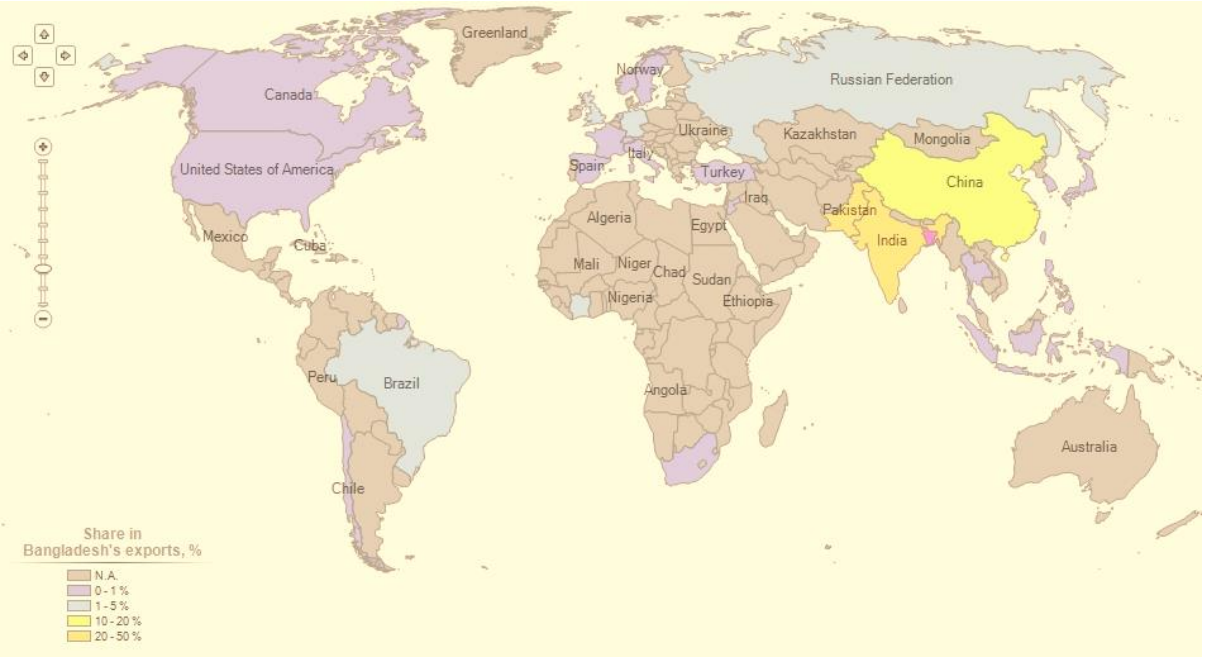
Table 2. 5 Export of jute products from Bangladesh (under six-digit HS codes) in 2018

HS Code	Total exported value in 2018 (000 US$)	Share in world exports for corresponding product (%)	Country's share in Bangladesh's export (%) *	Ranking in World Exports
530310	117,638	80.5%	Pakistan (41.1%) India (27.9%) China (13%)	1
530390	13,046	37.5%	India (34.7%) China (21%) South Korea (18.6%)	1
530710	335,166	97.4%	Turkey (41.5%) China (23.5%) Iran (7.3%)	1
530720	172,107	84.9%	Turkey (25.1%) China (14.2%) Indonesia (12.1%)	1
531010	76,907	40.2%	India (45.4%) USA (9.4%) Iran (7.2%)	2
531090	3,625	27%	South Korea (31.5%) USA (26%) Netherlands (13.5%)	1
630510	52,176	19.2%	Netherlands (20.1%) India (15.5%) Indonesia (8.6%)	2

Source: Authors' presentation based on ITC Trade Map Database (2019)
* Top three export destinations have been considered.

Bangladesh's main export destinations of jute products under HS code 530310 were Pakistan, India, and China in 2018 where the country's shares of exports were about 41, 28, and 13 per cent respectively. Under this category, Bangladesh's exports comprised 80.5 per cent of world exports making the country as the topmost exporter. Other importing countries were Brazil, the United Kingdom, Côte d'Ivoire, the Russian Federation, and Germany (see the Map 2.1 for global distribution of Bangladesh's export destinations of this product category).

Map 2. 1 Importing markets for products under HS Code 530310 exported by Bangladesh in 2018



Source: Authors' presentation based on ITC Trade Map Database (2019).

For products under HS code 530390, the country's exports accounted for 37.5% of world exports for in 2018. Bangladesh's major export markets were India, China, and South Korea where Bangladesh's shares of exports were about 35, 21, and 19 per cent respectively. The USA, Belgium, Spain, and the Russian Federation were other export destinations.

In case of jute products under HS code 530710, Bangladesh captured 97.4 per cent of world exports in 2018. Turkey and China were the two major importers where Bangladesh's shares of exports were about 42 and 24 per cent respectively. Other notable export destinations were India, Côte d'Ivoire, Egypt, the Russian Federation, and the USA.

Bangladesh's main export destinations of jute products under HS code 530720 were Turkey, China, Indonesia, and India in 2018 where the shares of exports were about 25, 14, 12, and 11 per cent respectively. Belgium, the Russian Federation, Jordan, Morocco, and Belarus were few other notable export destinations where Bangladesh's exports ranged from 1.5 to 5 per cent of the total exports.

For jute products under HS code 531010, Bangladesh's exports comprised 40.2 per cent of the world exports in 2018. India was the main importer of these products with a share of 45.4 per cent. Other important export destinations were the USA, Iran, China, and the Netherlands.

Bangladesh's key export destinations of the products under HS Code 531090 were South Korea, the USA, and the Netherlands with 31.5, 26 and 13.5 per cent share of exports respectively in 2018. Australia, Tanzania, and Egypt were few other countries where Bangladesh's shares were 5.8, 5, and 3.9 per cent of the total exports respectively. However, since the value of exports under this product category is very low, proportionately high exports to developed countries like South Korea and the USA does not indicate a good market prospect of this product because the share of these countries in global jute market is very low.

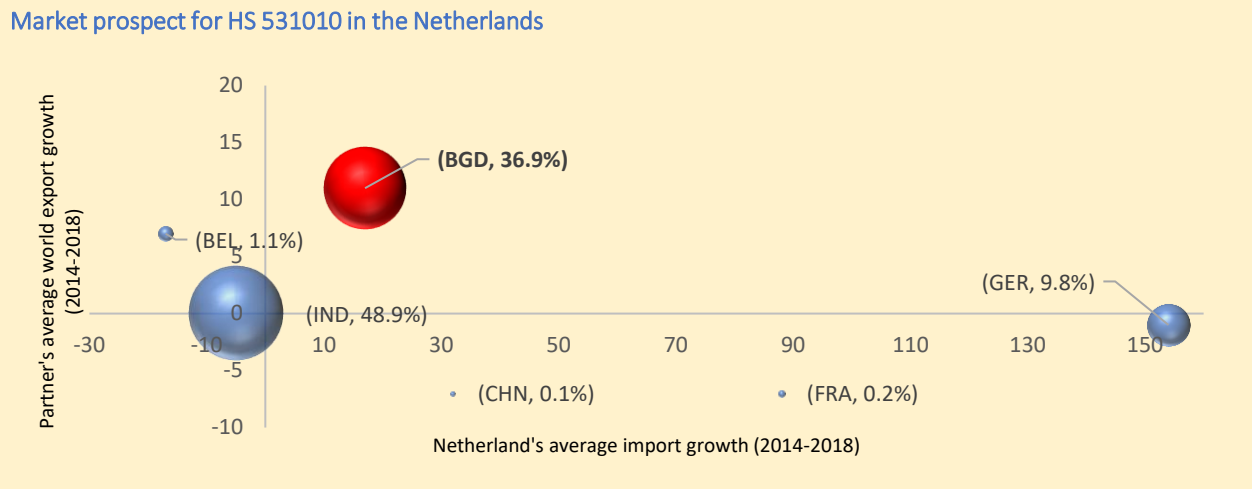
For products under HS Code 630510, the country's top three export destinations were the Netherlands, India, and Indonesia with about 20, 15, and 9 per cent of the share of exports respectively. A closer look at the data reveals that exports to India, Indonesia and the USA experienced decline while France, Germany, and the Netherlands registered increase in imports from the world.

Chapter 3: Exports of Jute Products: Recent Trends

As discussed earlier, Bangladesh is already one of the major exporters of jute products. However, the presence of established suppliers and emergence of new suppliers is likely to intensify the competition in the importing markets. This section presents an analysis of market prospects of selected jute items in the major export destinations. At HS 6-digit level, products under HS 531010, HS 531090 and HS 630510 have been selected to conduct a market prospect analysis. This analysis has been done considering three factors (i) export growth (of relevant jute products) of competing countries in the destination markets, (ii) their export growth of same products in the global market, (iii) competing countries' current (average of past five years) market share in the destination countries. The value of total imports by the importing country for a specific product has been shown on top of each figure. The results are summarized in Figures 3.1-3.5.

For products under HS 531010, Bangladesh's exports hold significant market share in Netherlands (36.9%), the USA (24.8%), and Germany (6.79%). India is the dominant supplier in these three markets capturing nearly 49 per cent, 85 per cent and 63 per cent respectively (Figure 3.1-3.3). Bangladesh can take further advantage of the tariff-free access to Netherlands market as the dominant supplier India is subject to average four per cent tariff. In addition, during last five years (2014-2018), India's negative export growth to Netherlands and presence of few suppliers' present opportunity of expanded market share. For the same products, Bangladesh's export growth to Germany was negative in recent times. Despite the negative growth in Germany's market during 2014-2018, options for enhancing competitiveness should be looked into as India's export growth declined in this market. Furthermore, for products under HS 531010, Indian goods are subject to average four per cent tariffs while Bangladesh enjoys tariff free access.

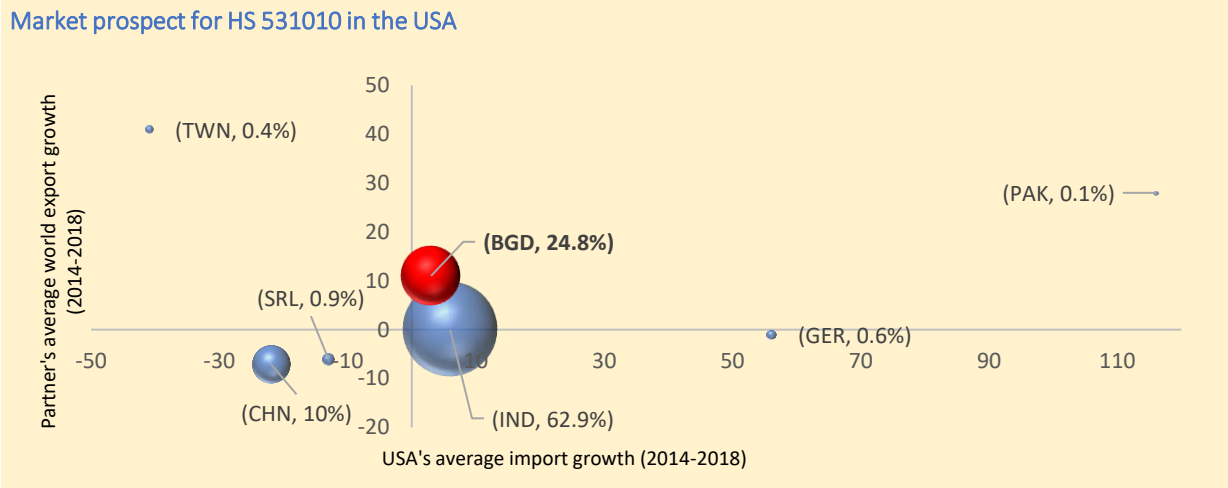
Figure 3. 1



Source: Authors' analysis based on ITC data. The bubble size represents partner's export market share of the product in the importing country. The horizontal axis represents the average import growth of the product of the importing country in 2014-2018. The vertical axis represents partner's average export growth of the product to the world in 2014-2018. Countries are indicated as BGD- Bangladesh, BEL- Belgium, CHN- China, FRA- France, GER-Germany, IND- India.

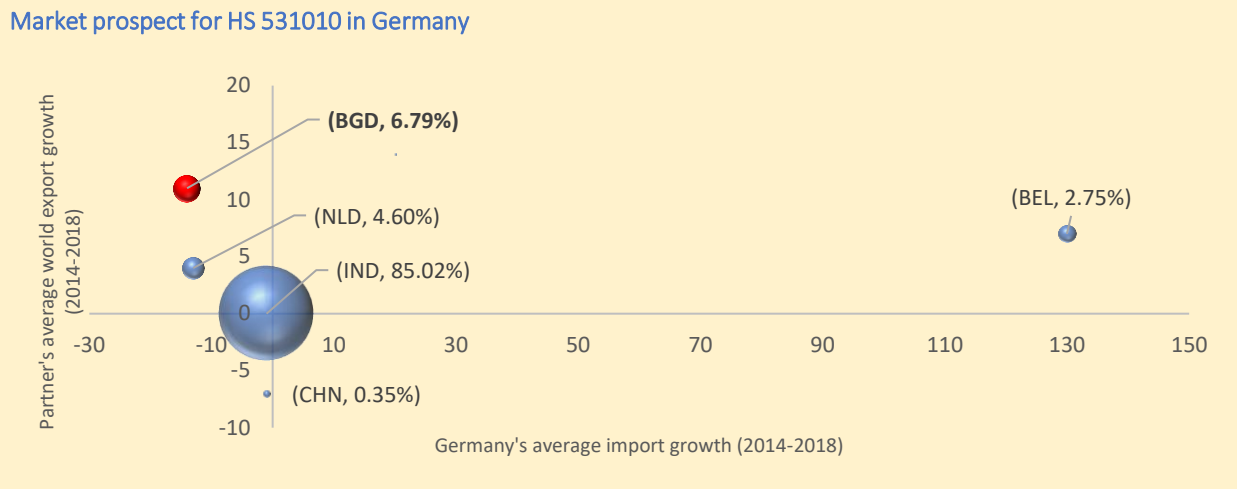
In the US market, Bangladesh's export for HS 531010 products has been growing at about three per cent vis-à-vis its overall world export growth at about 11 per cent over the past five years (2014-2018). In contrast, India's growth in this market was just double of that of Bangladesh over the same period, while India's export to world remained stagnant (Figure 3.2). As all the current suppliers enjoy tariff free access to U.S. market, future expansion in this market could be challenging for Bangladesh. However, the country can consider increasing export supply in this market building on the current presence.

Figure 3. 2



Source: Authors' analysis based on ITC data. The bubble size represents partner's export market share of the product in the importing country. The horizontal axis represents the average import growth of the product of the importing country in 2014-2018. The vertical axis represents partner's average export growth of the product to the world in 2014-2018. Countries are indicated as BGD- Bangladesh, CHN- China, GER- Germany, IND- India, PAK-Pakistan, SRL- Sri Lanka, TWN- Taiwan.

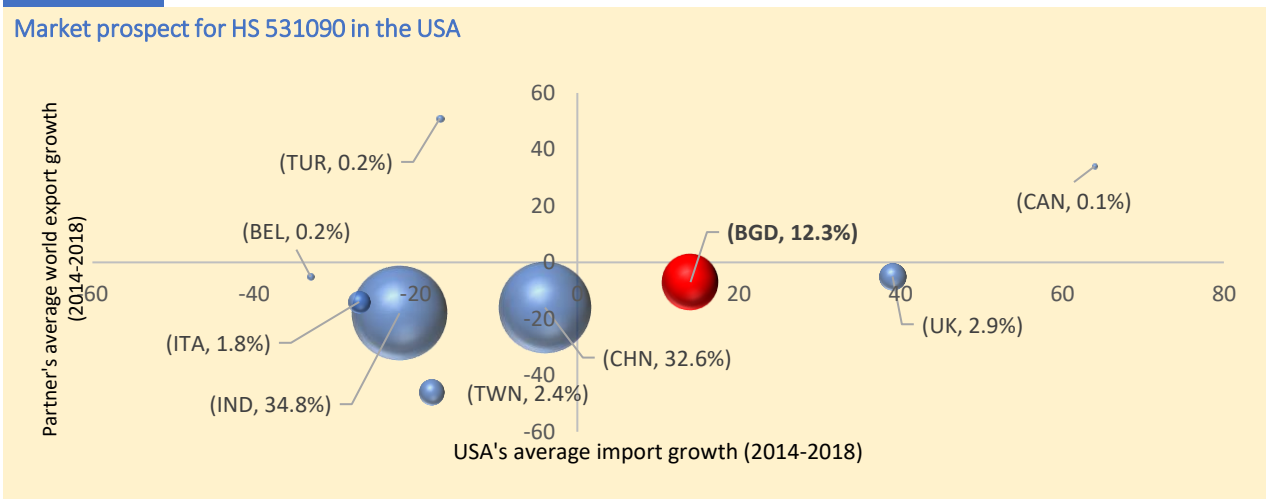
Figure 3. 3



Source: Authors' analysis based on ITC data. The bubble size represents partner's export market share of the product in the importing country. The horizontal axis represents the average import growth of the product of the importing country in 2014-2018. The vertical axis represents partner's average export growth of the product to the world in 2014-2018. Countries are indicated as BGD- Bangladesh, BEL- Belgium, CHN-China, IND- India, NLD- The Netherlands.,

For products under HS 531090, Bangladesh captures 12.3 per cent of the U.S. market (Figure 3.4). The U.S. is the top importing country for products under this category. Although India and China remain the major suppliers securing 34.8 per cent and 32.6 per cent of the imports to this market, the average export growth rates of both these countries have been negative during 2014-2018. However, total import volume by the U.S is quite low ($7.6 million).

Figure 3. 4

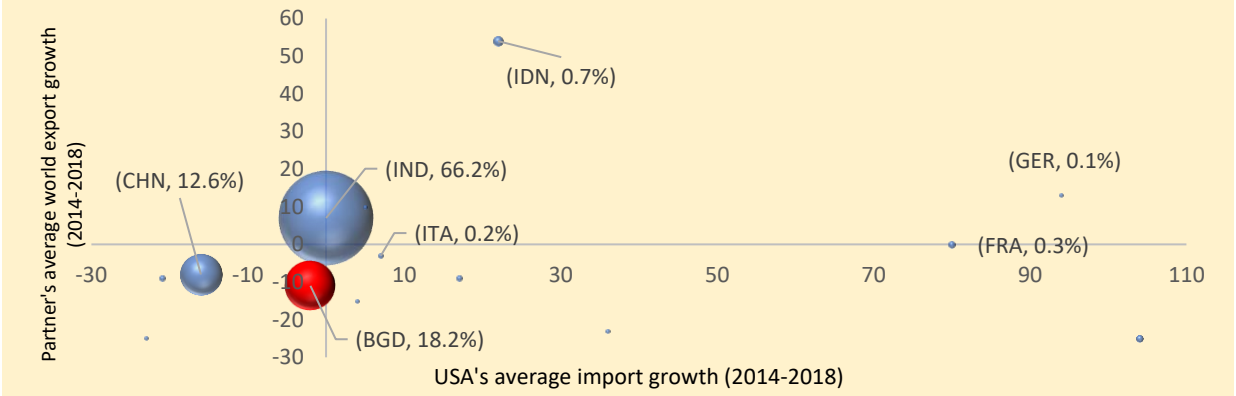


Source: Authors' analysis based on ITC data. The bubble size represents partner's export market share of the product in the importing country. The horizontal axis represents the average import growth of the product of the importing country in 2014-2018. The vertical axis represents partner's average export growth of the product to the world in 2014-2018. Countries are indicated as BEL- Belgium, BGD- Bangladesh, CAN- Canada, CHN- China, IND – India, ITA- Italy, TUR- Turkey, TWN- Taiwan, UK- The United Kingdom.

In case of products under HS 630510, the U.S market is considered. In 2018, the U.S. imports for this product stood at $10.8 million which represent 4.2% of world imports. Bangladesh is the second largest supplier in the U.S with 18.2 per cent market share. India is the dominant supplier capturing 66.2 per cent of this market (Figure 3.5). Exports of Bangladesh to this market registered negative growth (-7%) of exports to the US market over the last five years (2014-2018). Given the low import volume the USA, these markets appears to be less promising.

Figure 3. 5

Market prospect for HS 630510 in the USA



Source: Authors' analysis based on ITC data. The bubble size represents partner's export market share of the product in the importing country. The horizontal axis represents the average import growth of the product of the importing country in 2014-2018. The vertical axis represents partner's average export growth of the product to the world in 2014-2018. Countries are indicated as BGD- Bangladesh, CHN- China, FRA- France, GER- Germany, IND- India, IDN- Indonesia, ITA- Italy.

Overall, the analysis suggest that, for products under HS 531010, Bangladesh can consider further market expansion building on the current presence. For products under HS 531090 ad HS 630510, the export prospect seems to be less encouraging.

Chapter 4: Potential of New Products in Jute Exports

The above discussion reveals that raw fibre, jute sacks, jute hessian cloths, jute twine or jute yarn, jute shopping bags, rope, and some handicrafts are the traditional jute products that are being exported for years. In other words, traditional jute products are overwhelmingly dominating the export basket. However, increasing exports with such traditional and low-end products in the international market could be challenging due to changing nature of consumer preferences. The country needs to expand its range of product and introduce high-value products in the export basket with attractive design and target the emerging demand of heavy industries across the world. The following discussion presents several new products which can be introduced in future.

4.1 Diversifying jute fabrics through blending with textiles

Jute products of Bangladesh are conventionally used in packaging of food-grade materials, industrial packaging, and also used as various types of shopping bags, promotional bags and geo-textiles. Since the demand for natural fibre blends has increased in recent years, the demand for jute and other natural fibres that can be blended with cotton has also increased. However, there is a need to move jute's profile to blend it with the textile and clothing (T&C) industry (Bangladesh Apparel News, 2018). In recent times, T&C is using jute in many higher-end textiles for furnishings as well as in composites, especially as a wood fibre. The major blended jute manufactured products would be yarn and twine, jute sacking, hessian, carpet backing cloth and other T&C products. Nevertheless, this kind of blending of jute and textiles has opened up a new horizon for the future of jute, even though at present such diversified jute products explains a small proportion of total consumption. According to industry sources, if denim fabrics is produced with half jute and half cotton, then a jeans pant would cost only one-third of the cost of full cotton denim fabrics. In order to realise the enormous potential of such benefits, there is a need for investment and incentive for developing expertise, innovation, designing, branding and marketing.

Currently, Bangladesh's jute products are prompted by gradually increasing global interest for diversified and lifestyle jute products, such as jute gunny bag or sack bags, jute yarn and twine, handicrafts, shopping bags, beach bags, sports and travel bags, wine bags and other jute textiles. Bangladesh has a significant potential in the European markets as the demand for natural fibre is increasing in this part of the world. Nonetheless, in order to trail the ever-changing interest of the consumers of the developing and emerging economies, Bangladeshi jute manufacturers and exporters need to develop value-added jute products.

4.2 Using jute sticks for charcoal and carbon powder

Jute-sticks, one of the by-products of jute, hold significant export market opportunity. Traditionally, these are dried at villages for using as firewood for earthen stoves and wall of huts as well as boundary walls at rural houses or making fences. Although it does not produce considerable fuel, after burning the sticks, the ashes are used to wash utensils. Conversely, the ashes can be an important export product since there is a significant demand for jute-stick ash in the global market. The ash is used as raw material in many industries, such as cartridge of printers, charcoal and cosmetics. Activated carbon is produced from charcoal through manufacturing. High-quality jute-stick ash can be used to produce tooth-cleaning products, anti-toxin drugs, carbon paper, facewash, dry-cell batteries, dried ink of photocopier machines and other chemicals. Ash is widely used for water filters, in gas masks, and to remove odours.

The production of jute-stick charcoal dusting powder production began in Bangladesh in 2012 with the assistance of a Chinese citizen with an intent to export it to China. Later, many factories have been set up in Jamalpur, Narayanganj, Rajshahi, Pabna, Rajbari, Faridpur and Khulna to produce jute charcoal. Currently, around three million tonnes of jute-sticks are produced in the country per annum (The Financial Express, 2018). According to industry sources, if half of the jute-sticks can be utilised, then 250,000 tonnes of charcoal could be manufactured, which could alone earn about $200 million a year from international market. On the other hand, if half of the total product can be used to produce high-quality ashes, $3-3.5 billion could be exported to global industries as reported by industry sources. There is a good prospect for exporting jute-stick ashes as China has enormous demand for high-quality ashes for industries and charcoal as fuel[4].

Currently, Bangladesh is exporting charcoal only to the UK, Saudi Arabia and Taiwan except mainland China, which should be increased. Since Bangladesh gets duty-free market access of jute-stick carbon to China, the quantity of charcoal export to China can be increased significantly (The Daily Asian Age, 2018). In addition, there is considerable demand for jute-stick charcoal and ash/dust powder in Brazil, Korea, Japan, Malaysia, Hong Kong, Turkey, UAE, Germany, the United States, Australia, Canada and Mexico also have demand. Bangladesh can realise the potential of this product which will critically depend on maintaining international standard. However, instead of low-end regular charcoal, Bangladesh should produce, and export activated charcoal, which is a high-end product that would help earn more than three times foreign currency from this product.

[4] According to EPB data, in FY18, Bangladesh earned over $3 million by exporting jute charcoal to China.

4.3 Interior supplies for global automobile industry

Recently global car giants, such as BMW, Mercedes-Benz, Toyota, Renault, Mitsubishi, Volvo, Audi, Daimler Chrysler and Ford have started using natural fibre for furnishing car interior. Such usage has opened up a promising avenue for jute to be integrated with the global value chain of the automobile sector. It is an important reason for the recent growth of jute exports. Previously, the car industry used glass fibre to manufacture the interiors. Since glass fibre is not recyclable or biodegradable, automobile manufacturers started to look for a green alternative in 1994 where jute emerged as the most favourite natural input. The global car industry annually requires nearly 100,000 tonnes of jute, but Bangladesh exports only 12,000 tonnes for them (BluKonsult Global, 2019). Given the rising global market for green and climate-sensitive interiors of the car users, the country has the potential to export jute and jute goods worth $5 to $7 billion per annum if it can successfully capture the global market in the near future (LightCastle Partners, 2019).

4.4 Potential of Sonali Bag

The demand for jute bags has grown significantly over the past few years, particularly in the European market because of increasing environmental concern in the region. The demand for jute bags in non-producing countries has also spurred due to (i) ban on plastic packaging materials and bags; and (ii) biodegradability, durability, low cost, high strength, etc. of jute bags. The global market of jute bags is projected to reach a value of $2.6 billion by 2022 (Business Wire, 2017). Currently, India is the largest producer and exporter of jute bags in the world market followed by Bangladesh and China.[5]

Bangladeshi scientist Mubarak Ahmad Khan invented the jute polybag which is biodegradable, and environment and human health friendly product since it is produced by jute cellulose and food-grade colour. It is recyclable and reusable. Also, the bag has reselling value. It will be degraded within eight hours after getting in touch with water and will get decomposed in soil within 4-6 months. This jute polybag has been named as ‘Sonali Bag’ by Bangladesh. It has the potential to overtake India’s position in exports of jute bags because it would replace harmful polythene bags and it looks like traditional polythene. Therefore, this bag is likely to replace polythene bags without creating any psychological impact on the consumers.

The government has approved about $1.2 million to implement a project for producing Sonali Bags and conducting advanced research on inventing environment-friendly bags from Bangladesh Climate Change Trust Fund (BCCTF). Under the project, a laboratory with modern equipment will be set up and necessary chemicals will be procured to conduct advance research on Sonali Bags. Bangladesh Jute Mills Corporation (BJMC) has started manufacturing of Sonali Bag (Bangladesh Jute Mills Corporation, 2019). It earlier

[5] See https://www.businesswire.com/news/home/20171102006042/en/2.6-Billion-Jute-Bag-Market-Global-Industry

implemented a pilot project of the Sonali Bag at Latif Bawany Jute Mills at Demra in Dhaka and later set up a factory at Kayetpara in Demra to produce 100,000 pieces of Sonali Bags per day. Bangladesh can earn huge foreign currency by exporting Sonali Bag after meeting the local demand. According to news media report (The Daily Sun, 2019), initially, the size of the Sonali Bag would be 13"× 12" inch costed Tk.10 per piece, but its cost will be reduced to usual polybags with large-scale production of the Bag.

The government will also encourage private entrepreneurs to produce jute bags targeting both domestic and international markets. However, widespread availability and marketing of Sonali Bag will help reduce the use of polythene bags, promote environment-friendly packaging, earn significant amount of foreign currency, and help achieve import substitution of biodegradable and polythene bags in the country.

The global bioplastics market is estimated to reach $66 billion in 2022 while Europe and North America are expected to dominate the overall market of biodegradable packaging (Business Wire, 2017). It is mainly due to a strict resolution passed by the European Union to reduce overall consumption of thin plastic bags in the region by nearly 80 per cent by 2019 (Bangladesh Jute Mills Corporation, 2019). Bangladesh can also get a good share of the market, which will critically depend on its strategic marketing and advertisement of Sonali Bag as well as bringing variation in design and size of the products.

4.5 Jute-Tin

An important addition in the diversified jute products would be environment-friendly 'Jute-Tin', which would serve both domestic and international market. Instead of using lead and zinc, the core raw material to produce corrugated iron sheet (tin), this long-lasting jute-made tin is a recent invention of a Bangladeshi scientist Mubarak Ahmad Khan (inventor of jute polybag), which is made of jute hessian, resin, coupling agent and some hardener (Textile Today, 2019).

Jute-tin can be a cost-effective option for tin production. Metallic tin becomes oxidised in a few years, while jute-tin is more durable and stronger than that of metallic tin and does not face problem of oxidation. Its production takes only 20 minutes and it requires relatively less energy, such as electricity or gas. It can withstand rust for 100 years and it is a saline-resistant product which would be useful for coastal areas across the world.

Jute-tin is sound- and heat-proof and will save nearly all import cost of raw materials for producing metal sheets. It is a biodegradable product that can be used to make furniture, fashionable home interior and exterior as well as sheds. It can also be used as alternatives to plastic, wood, and cement. Therefore, it has a considerable potential as a new export product.

4.6 Jute leaf tea

Bangladeshi scientists have recently claimed to have discovered a long-lost recipe of herbal drink made from jute leaf, which they hope would gain popularity across the globe. The organic drink touted as "jute green tea" has 30 per cent more calories than spinach, and it contains iron, vitamins, calcium, carotene, fibre, carbohydrates, protein and antioxidants. They are expecting that the drink would be in high demand due to its organic qualities and comfort to prepare since one needs to put the powdered ingredients in a glass of water, stir it until it turns green, and then add sugar to taste.

Bangladesh Jute Research Institute (BJRI) shared the recreated recipe of the drink with the Jute Diversification Promotion Centre (JDPC). Intertrop, a Germany-based jute product manufacturing company, has initiated to manufacture jute tea (Jute Tee in German), and launch it in the European market in collaboration with the Government of Bangladesh based on an organic green tea based on the formula of BJRI. They received Bangladesh Standards & Testing Institution (BSTI) lab test report on the product. It started a pilot project in Lemubari, Manikganj through a farmers' cooperative called Lemubari Organic Farmer Cooperative. Currently, the project is being implemented in 7.5 hectares lands with 41 cooperative farmers and producing jute organically, which would be certified as per European regulations (The Daily Prothom Alo, 2019). About 2.5 metric tons of jute tea has been exported to Germany in 2018-19.[6] This product has a considerable prospect in the global market as a high-end product.

4.7 Jute viscose and cellulose

Regenerated cellulose fibre (viscose) is a popular man-made fibre, which is made from the chemical-induced transformation of natural polymers and used as a basic input of fabrics. Every year Bangladesh spends a considerable amount of money to import viscose fibres for textiles industry. Usually, viscose is derived from the 'cellulose' from wood pulp, but it is also possible to make viscose fibre from 'jute cellulose', which is more reasonable and advanced quality.

Recently China has offered technology and finance to Bangladesh for constructing a plant to produce viscose fibre from jute. Afterwards, a document was signed by BJMC and China's Textile Industrial Corporation for Foreign Economic and Technical Corporation to take the jute viscose project. In addition, an expert team from Bangladesh has visited some carbon/charcoal-based viscose plants in China.

[6] See https://www.daily-sun.com/post/422234/Bangladesh-to-export-5-metric-tons-tea-produced-from-jute-leaves-this-year.

BJMC has opined that the proposed plant will need a minimum investment of US$120 million, while Bangladesh annually imports viscose fibre worth about $87-97 million (Textile Today, 2017). According to Bangladesh Textile Mills Association (BTMA), 50-60 spinning mills used viscose with cotton to manufacture yarn. If viscose can be produced inside the country, then mill-owners will benefit. It would also serve as an important import-substitution product and bring a major breakthrough for the textile sector. By 2021, Bangladesh is expected to export jute and jute goods worth $5-7 billion, and jute viscose will contribute notably to increase jute exports.

BJMC and BJRI are working with researchers from Scandinavia on a new feasibility study into producing viscose from raw jute. Laboratory tests have confirmed that pulp can be produced from jute. Now Bangladesh need to conduct a feasibility study to determine its commercial viability. BJMC is eager to strengthen cooperation between Norway's forest research sector and BJRI.

The jute viscose project will enable Bangladesh to produce nearly 40,000 tons of viscose every year. This is expected to reduce that means cotton import to less than 200,000 bales each year. According to one estimate, England can collect 30 per cent cellulose from wood whereas Bangladesh can collect 65 to 70 per cent cellulose from 3 to 4 months old jute plant. From jute cellulose, Bangladesh can make viscose, jute polybag, frame for eyeglasses and many other products. Powder can be made from jute cellulose, which would cost around $25 to $27 for producing per kg of powder from jute, while the cost will be $1,800 from wood (Textile Today, 2018). Therefore, jute cellulose is much cheaper than that of wood. Medicine peel can also be made from jute cellulose.[7] Thus, both jute viscose and other products from jute cellulose can be important export products to earn foreign currency in the near future.

4.8 Jute geotextile

Jute geotextiles (JGT) can be important product sub-category in jute exports because of their extensive use in civil engineering, foundation, soil, rock, earth, or any other geotechnical engineering material in human made project, structure or system. They can be used in nearly all areas of civil, geotechnical, environmental, coastal, and hydraulic engineering, protecting soil from erosion especially in river banks and coastal areas, gardening, smooth water flow in narrow canals, separation, vegetation, growing mesh on slopes or as vertical drains, and soil stabilisation among others. JGTs have emerged as a commercially and ecologically viable alternatives to synthetic geotextiles which are harmful for the environment. Recently, BJRI and BJMC have developed some treatment techniques for JGTs which can enhance their life up to or even more than twenty years. This would allow JGTs to be used in the short-term to medium-

[7] A medical peel is regarded as skin-resurfacing treatment to cleanse dead skin cells which uncovers a "new" layer of skin that with enhanced smoothness and brightness.

term soil reinforcement, such as rural roads, construction access roads, flood and road embankments, etc.

JGTs are designed as biodegradable and photodegradable products. They do not increase soil temperature and remain compatible with soil. JGTs are also harmless for fish/microbes/eggs and helpful for plants. JGTs meshes with the soil and act as a fertiliser after a certain period. However, their life can be extended even up to 20 years through different treatments and blending depending on their use in civil engineering, such as soil protection at riverbanks and coastal areas, roads, and embankments agro-mulching, reinforcement, land reclamation and in the construction of road pavement. JGTs are also being used in road construction, landslide control, shallow land recovery, and protection of railway slope. These are regarded as the most versatile and cost-effective ground modification materials, which would save costs by 35-50 per cent compared to applications of their alternatives.[8] Some of jute mills are currently exporting JGTs, but in a scanty amount.[9] However, Bangladesh has a great potential to earn significantly higher amount of foreign currency by exporting JGTs produced with the same amount of jute fibre. The global technical textile market was valued at $235 billion in 2017, and is projected to reach $335 billion by 2025, growing at a CAGR of 4.5 per cent from 2018 to 2025 (Allied Market Research, n.d.). JGTs can contribute to earn significant amount of foreign currency through standardisation and substantial improvement of quality up to the satisfaction of the diversified need of the international market.

[8] Khan, A.J. (n.d.). "Technical Assessment of Jute Geotextiles for Civil Engineering Applications", available at https://www.technicaltextile.net/articles/technical-assessment-of-jute-geotextiles-for-civil-engineering-applications-3344, accessed on 16 July 2019.

[9] Currently, Latif Bawany Jute Mills, under state-owned BJMC, is exporting 5,000 metric tons and Janata Jute Mills Ltd., the only JGTs exporting private jute mill, is exporting 2,000-2,500 metric tons jute geo-textile every year.

Chapter 5: Policy Recommendations

5.1 Reviving BJMC

BJMC, the public corporation established to cater the needs in the jute market of the early-1970s, is still the largest state-owned manufacturing and exporting entity in the global jute industry (BJMC, 2019). However, it is overburdened with administrative inefficiency, age-old machines, very low productivity, financial troubles and continuous losses. The recurrent bail-out packages could hardly revive it from malfunctioning. Currently, BMJC's employees are paid as per the previous national pay scale. If BMJC administers the pay scale of 2015, then its annual loss is estimated to be more than double. The corporation, comprised of 22 jute mills and nine non-jute mills, is far away from financially self-reliant. It is difficult to see its bright future given its current state. On the other hand, it produces traditional jute items that are experiencing declining demand in the international market.

A major reason for its continued loss is to purchase raw jute at a price much higher than the wholesale price. It is because of the presence of vested interest group in between farmers and BJMC that takes the benefit of the government's sanction of money for buying jute long after the harvesting period. The middlemen mainly pay the farmers and derive abnormal profit because of delayed disbursement of money. In addition, the quality of jute purchased remains is also a pressing concern. BJMC procures nearly 30 per cent of jute tosa C-grade (relatively better quality), 41 per cent cross-bottom (medium quality) grade and 15 per cent low-grade jute, and the remaining 14 per cent is comprised of other types of jute. With such a composition of jute where the best quality of jute is mostly left out, BJMC's jute items fail to attract consumers in the international market. Therefore, in order to remain globally competitive even with traditional products, BJMC can consider directly purchasing quality jutes from the farmers during the harvesting period. To make this happen, it is essential that BJMC and relevant government agencies ensure timely disbursement of funds.

Currently, out of 10,835 looms, 4,452 looms are operational under the BJMC mills. However, it has been reported that these looms, mostly bought before 1971, are outdated. Lack of modernization and technological up-gradation have been causing substantial decline in productivity at the mills of BJMC. The efficiency of BJMC mills is now less than 50 per cent of their capacity, which raises concern on its sustainability given its existing machinery. Therefore, technological upgradation can help to address this capacity constraint, significantly reduce production costs and improve productivity in the traditional items in which Bangladesh have developed specialisation. Higher capital intensity with technological up-

gradation may, however, bring some structural shift in workforce but help BJMC to sustain in the competitive world market.

Furthermore, the current administrative apparatus, must be transformed into a system that will have a close resemblance to a modern corporate environment in this organisation. For that to happen, jute specialists, executives from export-oriented sectors and managers from private industries should be hired for overhauling BJMC. This can help it to become the leader among the jute exporters in the world. An endowment fund should be allocated to provide benefits subject to bringing excellence in jute exports and overcoming loss. Finally, a comprehensive strategy must be formulated to revive the organisation with a concrete work-plan and timeline, keeping in mind the above recommendations.

5.2 Introducing new products in the export basket

In addition to the new products described in Section 4, a range of new products should be incorporated in the export basket of jute. These should be jute diversified products (JDPs) and beyond the traditional basket of jute since conventional raw jute and jute products do not have much potential to attract buyers of the developed country markets. which include high-end jewellery box; particle board as intermediate good of furniture; hand- and machine-made value-added floor coverings; toilet and sanitary products for home, office and hotels; a range of interior fabrics for home, office, business centre, and social places; wall covering, aesthetic handicrafts and curtain; bed accessories, seats, blanket; and decorative and gift items. Some of the probable products are listed below.

Table 5. 1 New products for the export basket

Category	Products
Bags, jewellery/ jewellery box	• Handbags and shopping bags made of jute and jute blended fabric with or without lamination • Jewellery box with outer surface of jute material/fabric or with inner surface of jute material • Imitation jewellery made of jute or jute blended fibre used for ornamental purposes
Particle board	• Jute particle board made of fragments of jute sticks or other jute materials agglomerated
Floor covering	• Mats, matting of jute — jute floor covering, fabrics, woven with plain, stripe, dobby or jacquard designs. Jute mats can also be manufactured by braiding • Carpets of jute — made of jute yarns or fibres on surface which are projected from a substrate. It is formed by super imposing, one on the other, a number of layers of jute fibres. It would include bonded pile carpets nonwoven carpets, carpets made by flocking, and knitted carpets • Carpets made of jute in blend with other fibres where jute is more prominent • Other floor coverings fabric of jute woven with plain, striped, dobby or jacquard designs

Toilet wear, sanitary products	• Sanitary towels and tampons, napkins and napkin liners for babies and similar sanitary articles, of wadding of jute/jute blended materials. It would also include sanitary articles of wadding made from bleached/softened jute fibre mixed with cotton • Wadding, other articles of wadding of jute/jute blended materials • Terry towel and similar woven terry fabrics of jute or jute blended with other fibres where jute is prominent ingredient • Tissue papers
Fabrics	• A fabric made by interlacing fibres or yarn (single or twisted) • Polyethylene laminated jute fabrics — jute fabric laminated with polyethylene for any particular end uses • Jute fabric laminated with polypropylene for any particular end uses • Woven fabrics of jute • Jute fabric impregnated or coated with plastics used for packing industrial raw materials, hygroscopic fertilisers, etc. • Jute fabrics and articles used in machinery or plant • Fabrics and articles fully made of jute, coated, covered or laminated with rubber, leather • Fashion garments of jute (jute blended or union of jute where jute is the predominant fibre) men /boys and women/girls made of blended or union fabrics of jute used as fashion apparel • Floor coverings with jute base — linoleum, PVC or other man-made floor coverings with jute fabric as backing material • Tapestries — a closely woven fabric in which the pattern is developed by coloured yarn as warp or as weft or both where jute is predominant • Light weight to fairly heavy jute/blended fabrics whether or not coated, covered or laminated used for shelter
Wall covering and curtain	• Jute wall covering — jute fabric bleached/dyed/designed to cover wall for decoration purposes • Jute fabric (union/blended where jute is the predominant fibre), bleached/dyed and/or printed used as curtain
Bed accessories, seats, blanket, covering	• Jute blankets including blankets of blended jute — blanket made by woolenised jute or jute • Mattress of any kind having support base made from jute fabric, felt or laminates or coated • Sofa cover made of jute fabric (union/blended where jute is the predominant fibre), bleached/dyed and/or printed used as sofa cover • Various types of seats made of jute fabric (including union or blended), jute felt, jute composite/laminates/particle board or coated jute material, etc.
Others	• Tea bags • Footwear with upper of jute materials and outer soles of jute yarn or jute blended yarn for footwear • Decorative fabrics of jute — non-conventional, value added jute fabrics made from jute/blended yarns used for decoration purpose. • Jute articles having aesthetic value used for other than industrial and general textiles use • Artificial plant made of jute fibre/yarn/fabric or blended for decorative purposes. • Rubber and articles — reinforced with jute • Jute webbing — heavy jute tape, woven in a narrow tape loom • Jute spinach — the leaves of the jute plant used as vegetable in fresh or dry form, used mainly as food or fertiliser

Source: Authors' presentation based on International Jute Study Group (n.d.), *Harmonised System (HS) Codes for Jute and Jute Products*, project report, Dhaka.

As shown in the analysis in Section 3, Bangladesh is key suppliers in various markets. Building on the current presence, the country should proactively explore the opportunity to introduce these products in the markets where Bangladesh is already one of the leading exporters. Introduction of new products recommended in such markets needs to be analysed extensively. JDPC and BJRI can join hands to undertake such market research to understand future needs and market dynamics of potential jute products.

5.3 Innovations and market linkages

Even though jute is so far the single-largest industrial sector in Bangladesh, narrow range of products, such as raw jute, traditional jute goods, e.g., hessian, sacks and bags, yarn, floor covering, and home decors are failing to tap the emerging export potentials in the context of growing concerns of environment and climate change around the world. It is mainly because of deficiency of diversification of jute and jute products as per the satisfaction of consumer needs, especially in the markets of developed and emerging economies.

The International market of jute is no longer be perceived as a 'captive market' for Bangladesh even though it is the largest exporter in this sector. To significantly increase the export earnings from jute, investment in innovations and establishing better market linkages should be encouraged. The Government of Bangladesh has already taken an active interest in scientific invention and innovating new products, such as genome sequence of jute, jute viscose, jute tea and jute-tin.

To promote the product diversification through public investment, the BJMC, BJRI, private sector and other research institutes (such as Atomic Energy Commission), universities (agricultural universities, universities of science and technology, and other relevant departments of top local universities) and around 200 jute mills in private sector should be actively involved to foster innovation. Enhanced policy support can include financial incentive and an endowment fund to foster innovation and engage skilled human capital from both public and private sectors.

JDPC has been promoting diversified jute products since 2002 that helped to produce more than 200 products targeting the international market. The products include bags, shoes, gardening products, household and everyday items (e.g., cushion and pillow, basket, floor cover, table stationeries, ornaments, showpieces), shari (a traditional woman attire), dresses for women and men, and table mat. It also organises skill development training for entrepreneurs, designers, artisans and workers, and training for new entrepreneurs. To further promote these diversification efforts and strengthen JDPC's capacity, the authorities can consider allocating more resources. Budgetary allocations can be directed in the projects on public-private partnership to promote research and development. However, timely implementation of such projects should be emphasized to increase export earnings from jute products.

5.4 Commercial viability of new products

Over the recent years, some new jute products have been invented. These innovations show promising potential to emerge as important export items of Bangladesh. However, these products are still under rounds of piloting to assess their commercial viability. For example, Sonali bag and jute viscose are widely perceived to have enormous potential in both domestic and international markets, even though their unit prices at pilot stages are still significantly higher than those of their nearest substitutes. In order to make them commercially viable, attracting both domestic and foreign investment can be considered as a policy option. For attracting domestic investment, the option of introducing special schemes with soft term loans could be considered by the Bangladesh Bank. BJMC could benefit from modernized production units in its own land. To attract foreign investments, opportunities in Special Economic Zones (SEZs) could be explored for establishing factories. These support measures are likely to reduce the initial cost of production significantly and help market new commercially viable jute products.

5.5 Production and marketing of geotextiles

As it stands, most of the JGT products in Bangladesh are elementary in nature which are not specially treated or mixed with other processed eco-friendly raw materials for hybrid and high-end JGTs. Currently, more than ten types of JGTs are globally marketed through Alibaba, China's largest online commerce company. However, these are basic JGT products and unlikely to find viable market in the developed countries. Without exporting superior products of JGTs, Bangladesh can hardly move forward to earn substantial amount of foreign currency and secure its position in the expanding global market of geotextiles and technical textiles. To overcome this constraint, Bangladesh needs to produce superior JGT products by improved chemical treatment and standardization according to the purpose of use or the diversified needs of the global market.[10]

Bangladesh signed a memorandum of understanding (MoU) with India for standardisation of locally produced JGTs.[11] However, India is Bangladesh's main competitor of jute products in the world market and the likely outcome of standardisation though such a MoU remains uncertain. Therefore, Bangladesh should proactively look for investment, and support in standardization and marketing from other interested countries, such as China. Future growth in superior JGT production and marketing is likely to require more of such cooperation.

[10] According to Key Informant Interview (KII) with Director General, Bangladesh Jute Research Institute.

[11] See https://www.textiletoday.com.bd/jute-geo-textile-its-prospect-in-bangladesh/

5.6 Investment and financing

As discussed earlier, the country needs to transform its of age-old and low-end products, such as jute fibre and sacks which have scanty prospects in earning foreign currency and capturing developed country markets. Rather, it is imperative to foster investment in high-end diversified products listed in Table 5.1.

Attracting Foreign Direct Investment (FDI) could be a viable means of quality improvement, new technology adoption, standardization, advertisement and promotion, research & development (R&D), and greater market access of jute products in the global market. Bangladesh can actively explore the option to attract FDIs to foster the production of new and high-end products (such as jute viscose), which are yet subject to the assessment of commercial viability. Developing high-end products for global markets can serve the international demand of such products in various sectors including construction, disaster management, and general consumers. FDIs could also be useful in enhancing technology diffusion, improving skills of manpower working in the jute sector, and positive spill over through competition with local jute firms. This can help rejuvenate the jute sector to realize its export potential further.

Another financing option to promote new and promising products for local firms for the international market could be the creation of a special fund with provisions for low interest and soft term loans. In this context, Bangladesh Bank is already offering support which can be further strengthened. For instance, in June 2019, the size of the existing refinancing scheme was increased by one billion Bangladeshi Taka (BDT) from two billion BDT.[12] The scheme now allows businesses to borrow money at eight per cent interest rate which is only one per cent lower than the previous rate. While this is a welcome move for diversification of jute products aimed at entering market of developed and emerging countries, this measure could be further strengthened by making room for credit with softer terms.

[12] Bangladesh Bank also extended the tenure of the fund till June 2024. See: http://www.newagebd.net/article/76311/jute-refinance-fund-hiked-by-tk-100cr-to-run-till-2024

Chapter 6: Conclusion

For decades, Bangladesh has remained as the top international exporter of jute products. Currently, Bangladesh holds just less than two-thirds of the global jute market, followed by India with about one-fifth of the total jute exports of the world. However, exports of jute products are currently about two per cent of the country's total exports of goods. While other important products are demonstrating growth in terms of total exports and their share in export earning, jute products are showing a rather diminishing trend for more than a decade. Despite numerous measures for export promotion and diversification of jute products, the traditional products, such as raw jute fibre, jute sacks and bags for packing of goods, cabled yarn, and woven fabrics, have remained the most dominant export products which have limited prospect in the global market.

Therefore, in order to revive jute as an important category in the export basket, Bangladesh needs to actively promote the development of high-end products, rather than traditional age-old jute items. Such products would include biodegradable Sonali polybag, jute-tin, jute viscose, treated and value-added geo-textiles, particle boards, fashionable wall and floor covering, toilet wear, sanitary products, fashion fabrics, curtain, bed accessories, seats and blanket covering, fabrics blended with textiles, charcoal and carbon powder from jute stick, interior supplies for global automobile industry, and tea of jute leaves. These products along with other products discussed above can be considered for fast track investment and large-scale production aiming at the global market.

Jute products are one of the highest priority sectors in the Export Policy (2018-2021). Also, policymakers showed active interest in scientific invention and innovating new products for reviving the jute sector. Despite these efforts, publicly owned BJMC, the key institution for the domestic supply and exports of jute goods, remained far less than efficient to tap into the promising potential of jute exports. BJMC can be reformed through revamping its management and installing modern machinery. Innovations and market linkages are must to add high-end items in the export basket, which requires funding in R&D and attracting FDI in the jute sector. In addition, private investments in this sector could be promoted through soft loans. Finally, it is imperative to undertake comprehensive market research along with reinvigorated policy support to meet the globally emerging demand for specific jute products and boost jute exports thereby.

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Annex

Table A 1 Export Market of Jute Products ('000' US$)

	2014	2015	2016	2017	2018
World	1,176,118	1,209,217	1,358,127	1,449,808	1,116,190
Bangladesh	0	779,120	879,459	958,882	701,807
India	225,156	202,203	230,736	243,545	220,732
Nepal	36,199	33,491	37,582	45,144	46,872
Others	914,763	194,403	210,350	202,237	146,779

Source: Authors' presentation based on ITC trade map statistics.

Table A 2 Exports of jute and jute products (2010-19)

HS Code	Product Name	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
53031000	Jute and other textile bast fibres, raw or retted		237.884 (64)	209.231 (56)	96.404 (15)	104.992 (44)	152.761 (43)	157.292 (36)	141.151 (47)	113.264 (49)
53039000	Jute and other textile bast fibres, processed but not spun; (excl. retted fibres of this kind, flax, true hemp and ramie)	25.916 (37)	14.482 (26)	11.224 (17)	5.180 (18)	4.912 (18)	16.943 (26)	10.545 (25)	14.528 (20)	14.23 (24)
53071000	Single yarn of jute or of other textile bast fibres of 53.03	498.738 (78)	427.483 (78)	428.684 (80)	400.029 (82)	397.370 (75)	411.531 (74)	434.096 (73)	466.055 (75)	381.214 (68)
53072000	Multiple (folded) of cabled yarn of jute	1.920 (14)	40.663 (45)	78.054 (50)	132.778 (54)	154.946 (64)	147.196 (63)	173.786 (69)	181.660 (72)	130.368 (69)
53101000	Unbleached woven fabrics of jute or of other textile bast fibre	28.111 (51)	26.667 (49)	38.789 (52)	44.814 (67)	60.870 (63)	59.910 (61)	55.224 (47)	94.864 (60)	99.757 (58)
53109000	Woven fabrics of jute or other textile bast fibres (excl. unbleached)	18.672 (28)	17.993 (24)	16.964 (29)	9.695 (32)	3.023 (21)	2.911 (23)	2.886 (17)	3.417 (21)	3.083 (19)
63051000	Sacks and bags, used for packing goods, of jute, etc.	167.465 (88)	185.259 (93)	237.419 (100)	59.110 (92)	139.455 (92)	122.527 (97)	127.534 (90)	122.816 (104)	90.237 (93)

Note: Numbers in the parentheses indicate the number of countries or territories where the respective product is exported.
Source: Authors' calculation based on EPB database.

Table A 3 Actual Exports of Jute Products by Country/Territory, 2017-18 (US$)

	53031000	53039000	53071000	53072000	53101000	53109000	63051000	Total
UAE	76,917		5,398,791	517,894	3,020,506	4,577	4,416,957	13,435,642
Afghanistan			366,939					366,939
Argentina			127,746	113,291				241,037
Australia	2,817		64,879	42,728	2,728,063	40,129	1,190,449	4,069,065
Azerbaijan			27,436		224,777			252,213
Bosnia and Herzegovina			17,163					17,163
Belgium	314,612		3,980,892	8,924,474	51,592	45,968	956,998	14,274,536
Bulgaria			592,497	121,292	30,043		10,174	754,006
Burundi							132,503	132,503
Benin							844,169	844,169
Saint Barthélemy			5,920,133		4,213	291,140		6,215,486
Brunei Darussalam							29,248	29,248
Brazil	3,424,281		1,919,745	2,467,698				7,811,724
Belarus			2,413,630	257,946				2,671,576
Canada	254		32,192	124,043	306,981	55,833	474,411	993,714
Congo							512,934	512,934
Switzerland	1,158						19,897	21,055
Côte d'Ivoire	2,336,898		13,010,125		32,258		1,059,132	16,438,413
Chile	355		357,439	75,905	78,257	20,480		532,436
Cameroon							2,868,788	2,868,788
China	16,551,652		87,085,581	21,064,301	3,525,420	24,939	1,508,796	129,760,689
Colombia			21,358				17,347	38,705
Costa Rica					5,606	12,103	916,809	934,518
Cuba	473,843							473,843
Cyprus					12,892		12,248	25,140
Czech Republic			108,845		26,895			135,740
Germany	530,536		681,459	309,724	1,095,654	6,702	1,572,367	4,196,442
Djibouti	646,772							646,772
Denmark	3,399			21,886			50,364	75,649
Dominican Republic	57,074						150,370	207,444
Algeria			2,599,702	118,262			81,977	2,799,941
Ecuador							212,163	212,163

	53031000	53039000	53071000	53072000	53101000	53109000	63051000	Total
Estonia	6,890						85,434	92,324
Egypt			30,292,598	5,954,794	3,376,802		139,667	39,763,861
Spain	2,627		2,865,590	879,865	168,890		1,241,896	5,158,868
Ethiopia			2,624,634	33,992	7,939		987,982	3,654,547
Fiji							3,137	3,137
Faroe Islands							60,690	60,690
France	65,272			46,500	38,555		550,286	700,613
United Kingdom	2,528,398		581,068	316,639	1,417,534	61,931	196,635	5,102,205
Grenada							48,647	48,647
Georgia			21,290	140,573	39,281			201,144
Ghana							299,260	299,260
Gambia							423,887	423,887
Guinea					36,345		276,039	312,384
Greece			136,920	431,305	108,576		271,918	948,719
Guatemala							421,032	421,032
Guinea-Bissau							526,291	526,291
Hong Kong	290			18,007			1,011	19,308
HONDURAS							1,321,151	1,321,151
Croatia			66,310	65,394	15,659			147,363
Hungary			20,426		83,982			104,408
Indonesia	762,437		2,919,218	19,806,714	211,100		4,868,217	28,567,686
Ireland			662,293	78,216		13,552	55,677	809,738
India	44,933,272		26,463,666	32,444,388	49,522,305	224,824	7,997,022	161,585,477
Iran	11,377		27,483,335	2,455,323	5,356,355		277,205	35,583,595
Iceland							230,429	230,429
Italy	3,291		685,697	266,941	704,984		733,933	2,394,846
Jamaica							112,281	112,281
Jordan			736,495	3,694,201	55,836		523,553	5,010,085
Japan	300,934		2,561,917	677,220	1,761,371	11,372	617,982	5,930,796
Kenya			126,507		45,850		3,601,827	3,774,184
Comoros							20,228	20,228
Korea, Republic of	2,310,439		1,264,123	866,336	2,422,383		1,279,260	8,142,541
Kuwait				13,975				13,975

	53031000	53039000	53071000	53072000	53101000	53109000	63051000	Total
Kazakhstan			1,861,500	142,464				2,003,964
Lao PDR							39,704	39,704
Lebanon			55,954	14,858	318,645		105,010	494,467
Sri Lanka	10,064		978,598	159,674	545,707		30,627	1,724,670
Lithuania			40,146	39,704			53,015	132,865
Libya			281,193	53,415			295,408	630,016
Morocco			714,990	2,153,501			102,416	2,970,907
Moldova, Republic of			53,861	82,943				136,804
Madagascar							1,003,625	1,003,625
Macedonia			18,408					18,408
Myanmar	21,813		510,237	20,015			36,758	588,823
Mongolia				290,977				290,977
Malta				16,577				16,577
Mauritius							11,351	11,351
Malawi				36,063			30,023	66,086
Mexico	1,432		135,225	1,881,778			1,450,239	3,468,674
Malaysia	5,686	86,603	175,285	88,232			66,444	422,250
Mozambique							241,940	241,940
Nigeria			28,443	418,070			111,386	557,899
Nicaragua							919,455	919,455
Netherlands	536,647		466,429	486,906	4,595,468	112,892	10,583,584	16,781,926
Norway	2,904						123,340	126,244
Nepal	7,604,322		525,278	121,367				8,250,967
New Zealand	735				1,186,944	132,541	125,677	1,445,897
Oman			39,664	13,527				53,191
Peru	312		3,661	86,803	105,917		643,601	840,294
French Polynesia							135,971	135,971
Papua New Guinea				2,539			1,163,815	1,166,354
Philippines	98,777			31,375	48,292	10,170	67,123	255,737
Pakistan	52,768,877		2,159,409	233,063	30,063		16,304	55,207,716
Poland	17,405		686,897	1,060,149	161,508		353,100	2,279,059
Portugal			135,861	80,918	13,243	168,420	8,095	406,537
Paraguay					57,665			57,665
Qatar		21,214	42,161	47,268			144,965	255,608

	53031000	53039000	53071000	53072000	53101000	53109000	63051000	Total
Romania	6,450		1,151,591	567,851	35,813			1,761,705
Serbia			32,115					32,115
Russian federation	1,062,123	1,096,197	9,727,895	3,631,424	30,641		535,597	16,083,877
Rwanda							73,934	73,934
Saudi Arabia			1,603,107	7,447,904			265,811	9,316,822
Solomon Islands							260,730	260,730
Sudan					1,985,827		47,370,328	49,356,155
Sweden	44,255			28,037	29,000	1,054		102,346
Singapore					24,524		10,470	34,994
Slovenia			88,298	70,902			52,908	212,108
Sierra Leone							113,300	113,300
Senegal							100,068	100,068
Somalia							20,479	20,479
Sao Tome and Principe							16,231	16,231
El Salvador	823,860		1,064,083					1,887,943
Syria			251,017	306,515	144,740			702,272
Togo							18,963	18,963
Thailand	109,025	10,519	196,031	257,956	208,206		271,296	1,053,033
Tajikistan			617,561	44,439				662,000
Timor-Leste							36,923	36,923
Turkmenistan			205,093					205,093
Tunisia	921,787	2,228,826	441,721	35,395	122,719		960,302	4,710,750
Turkey	60,765	12,431	180,790,740	46,665,047	940,480	20,907	2,314,506	230,804,876
Trinidad and Tobago							54,115	54,115
Taiwan, PRC	27,072	20,769	788,875	69,838			17,260	923,814
Tanzania			56,395	49,534	182,659		2,057,364	2,345,952
Ukraine			1,568,426	2,696,706	73,261		26,806	4,365,199
Uganda							2,349,845	2,349,845
United States	502,829	898,934	8,588,659	2,674,835	5,937,406	878,564	3,118,563	22,599,790
Uruguay							24,516	24,516
Uzbekistan			21,445,572	5,509,621	1,106,478		156,648	28,218,319

	53031000	53039000	53071000	53072000	53101000	53109000	63051000	Total
Venezuela							39,085	39,085
Viet Nam	1,234,526		4,050,231	1,298,443	61,511		1,608,897	8,253,608
Vanuatu							199,366	199,366
Yemen							15,794	15,794
South Africa	720		236,197	393,877	168,520		76,286	875,600
Zimbabwe							29,498	29,498
Total	141,208,183	4,375,494	466,055,448	181,660,341	94,632,138	2,138,098	124,269,543	1,014,339,245