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## COMPARATIVE ADVANTAGES OF JUTE EXPORT IN BANGLADESH, CHINA AND INDIA

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### ABSTRACT

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The aim of this study was to review the trend of production and export of jute as well as comparative advantages of jute export of Bangladesh, China and India. In the case of production, India is the leading country which is followed by Bangladesh, China, Nepal, Zimbabwe, Uzbekistan, Egypt and others. However, Bangladesh plays the supreme role over other countries in the world for exporting jute. Jute export fluctuated erratically over the past four decades in these three most jute exporting countries. The Revealed Comparative Advantage (RCA) has been enumerated for comparing the jute export advantages in the global market. Bangladesh always enjoys greater comparative advantages than China and India although the revealed comparative advantages are less in recent years than those were one decade ago. But it can't catch the high-value market because exporters have mainly focused on raw jute while jute goods have high potentiality. The recommended issues urge to enhance the productivity of jute cultivation, inaugurate more diversified products, and explore new markets for exports.

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## INTRODUCTION

Jute is a biodegradable and natural fiber with different inherent advantages like high tensile strength, low extensibility, moderate heat, fire resistance and long staple lengths. It has advantages over synthetics and protects the environment as well as maintains the ecological balance. Jute (*Corchorus capsularis* and *Corchorus olitorius*) is eco-friendly vegetable fiber plant which is known as golden fiber in Bangladesh. In the trade, there are usually two names of jute, for instances, *Corchorus capsularis* is called White Jute and *Corchorus olitorius* is named as Tossa Jute (IJSJ, ITC and CFC, 2006). Jute is a labor-intensive product for which Bangladesh has favorable weather. It was the single most export item until the late 1980s (BJRI, 2008). With the inauguration of ready-made garments and later on shrimp, jute lost its significant portion in the export market. But recent tend to environment-friendly product and consciousness to use the synthetic product, there is a unique opportunity to regrow the jute market.

Over the past decade, Bangladesh economy has augmented significantly by sustaining over 6% growth rate of Gross Domestic Product (GDP). The agricultural sector is the backbone of Bangladesh's economy employing 40.60% of the total population and contributes about 13.60% of GDP (BER, 2019). The country has experienced significant trade openness and benefitted from it, making an important transition from a low developed economy to a trading nation (Rahman and Bari, 2018). Export of Bangladesh follows an upward trend accompanying with enlarging the size of the national economy. Export receipts of Bangladesh during 2018-19 stood at USD 40535 million which was only USD 709.85 million in 1980-81 (EPB, 2019). Although the volume of Bangladeshi international trade followed an upward trend, it was not always a significant part of GDP. Export of goods and services from Bangladesh as a percentage of GDP was most (20.2%) in 2012-13. After that year, the export performance was not enough in comparison with GDP, which was only 14.8% of GDP in 2018-19 (World Bank, 2020). Along with all products and services, agricultural goods export is also not satisfactory as Bangladesh's trade of agricultural commodities was about 11.4% of its global trade in 2015-16 (ITC, 2018). Agricultural commodities export volume has increased in value over the last four decades after independence but the share of agricultural products export in total export value is not prominent enough. Reasons behind this are low productivity and untapped agro-processing industry which can't ensure quality products (Rahman and Bari, 2018). In our economy agricultural product and agro-based product indicate a high potential to improve the export and present themselves as the best candidate to make such initiative (BFTI, 2016). Agricultural products export of Bangladesh usually focused on jute goods, tea, vegetables, tobacco, fish and shrimp, spices, meat, fruit, milk, processed food etc. (BBS, 2019). In the early years after independence, the country's exports consisted mostly of raw jute and few jute items. The export structure changed vividly by ready-made garments (RMG) comprising woven apparel and knitwear products while jute export halted (Taslim and Haque, 2011). RMG sector comprises more than three-quarters of the total export. One of the most important export item among agricultural products is jute and jute goods which contributed 2.69% of the total export revenue (EPB, 2019). Islam and Alauddin (2012) worked on comparative analysis of production, area, the yield of jute of Bangladesh with other major jute producing countries. They unleashed that growth of jute production followed a declining trend. Besides, Bangladesh is the most jute producing countries after India but China achieved the largest yield in the world. They suggest to use biotechnology for improving the quality and enhance the application area of jute for regrown the jute market. Bangladesh has lost its leading position in the global jute market over the years because of the low diversified product range and technical deficiency. Nonetheless, China got greater advantages as they export high valued jute product with a far lower amount than Bangladesh. Investing in the technology upgrade, skill development and market promotion with identifying new potential market were highly recommended (Rahman and Khaled, 2011). Meanwhile, Akter (2015) analyzed market potentials for Bangladeshi jute products. Australia was identified as a new potential market. They had high demand of jute products because of the rapid increase of total consumer (i.e. the rise of multi-cultural immigrants), government policy against synthetic/polypropylene products, the awareness of environmental role and impact of products among local consumers. Since none of these studies divulged the comparative advantages in jute export along with other major jute exporting countries, it is urgent to know the situation of Bangladesh in the global market for proper policy implications to ameliorate the market performance. In these circumstances, this paper explores the production and export trend of jute in Bangladesh, China and India. Besides, enumerate comparative advantage of jute export of these three major jute exporting countries.

## MATERIALS AND METHODOLOGY

The paper is based on secondary data which were collected from different web sites such as FAOSTAT and Trademap. To satisfy the objective of comparative advantages, Revealed Comparative Advantage is a widely used method (Rahman and Khaled, 2011; Ullah and Kazuo, 2011; Xinhua, 2008). Revealed Comparative Advantage (*RCA*) concept is used to identify a situation when free trade allows countries to gain from increasing specialization in activities where they have a considerable comparative advantage. It can be computed by the following formula:

$$RCA_{ik} = \frac{(X_{ik}/X_i)}{(W_k/W)} \quad (1)$$

Where  $RCA_{ik}$  represents  $k$  commodity's revealed comparative advantage in country  $i$ ,  $X_{ik}$  is the exports of commodity  $k$  from country  $i$ ,  $X_i$  is the total exports of country  $i$ ,  $W_k$  is the world total exports of commodity  $k$  and  $W$  is the world total exports of all commodities. If  $RCA$  value is greater than 1, it shows that the exports by the country are focused on a few commodities and this product has a comparative advantage in the global market. On the other side,  $RCA$  value less than 1 indicates that the country has an extensive trade commodities range, and it has no comparative advantage on the particular commodity.

## RESULTS AND DISCUSSION

### Comparative Scenario of Jute Production

The agro-climatic environment of Bangladesh is suitable for producing jute. Jute and allied fibres are the second most important natural fibres next to cotton (Rahman and Khaled, 2011). The jute sector is a significant source of foreign exchange earnings with higher value additions for Bangladesh.

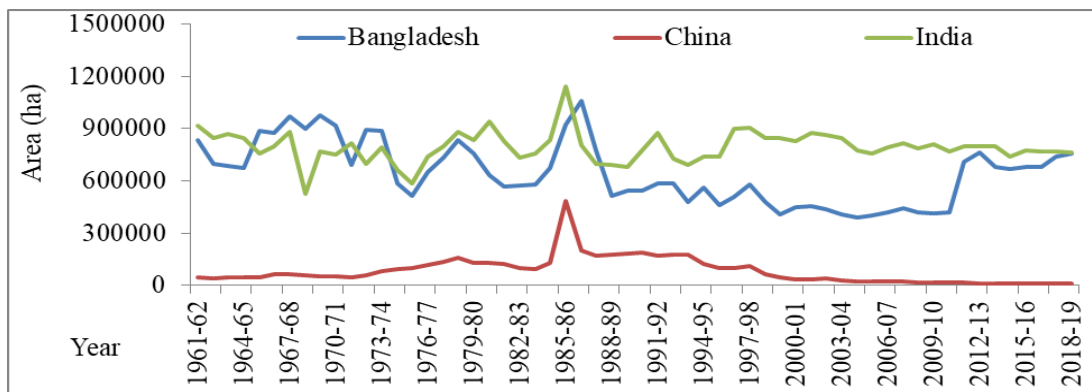
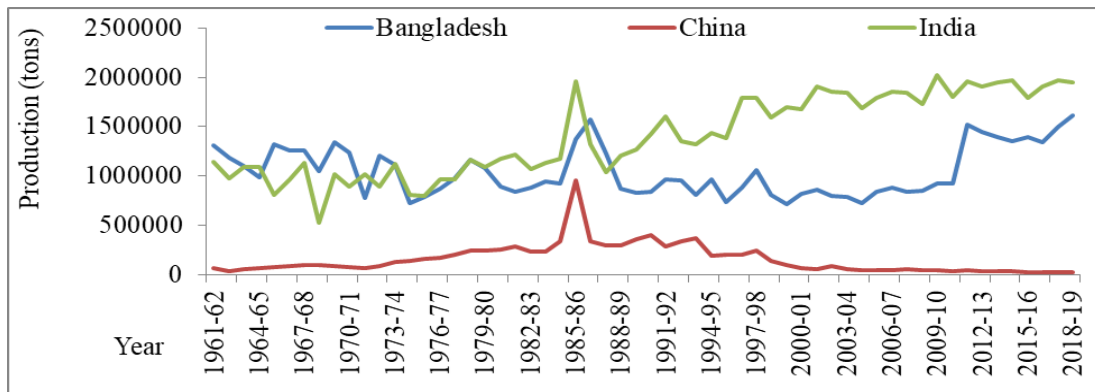


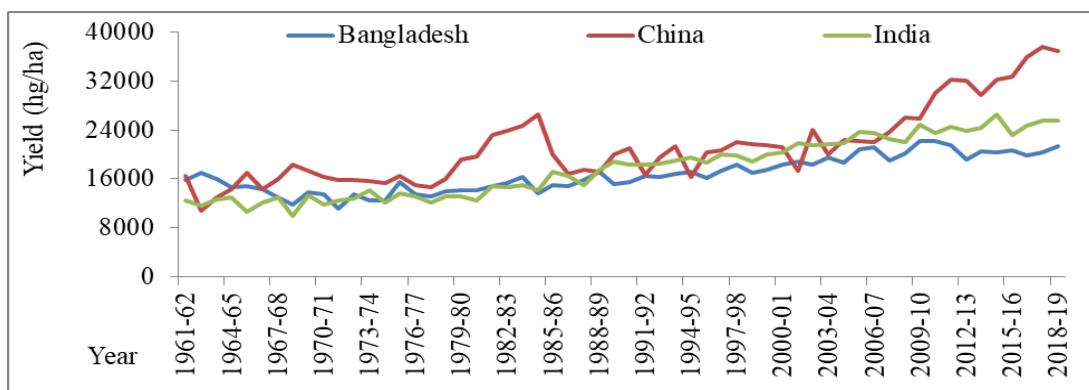
Figure 1. Jute cultivation area in Bangladesh, China and India over the years (FAOSTAT, 2020)

The areas under the production of jute in Bangladesh, China and India have moved randomly all over the years. Bangladesh experienced highest jute cultivation area (1057942 ha) in 1986-87, whereas China and India had the highest production area in 1985-86 which were 482000 ha and 1145700 ha respectively (Fig. 1). India always has been the leading country in the production of jute in the world except for a few years when Bangladesh played the superior role. In 2018-19, India had the largest production area (764359 ha) which was closely followed by Bangladesh (758248 ha) (Fig. 1). The other major jute produce countries are China, Nepal, Zimbabwe, Uzbekistan, and Egypt in 2018-19 (FAOSTAT, 2020).



**Figure 2.** Jute production in Bangladesh, China and India over the years (FAOSTAT, 2020)

As the production quantity follows the area of production, India is the most jute producing nations followed by Bangladesh and China in 2018-19 (Fig. 2). The greatest quantity (1613762 tons) from Bangladesh was got in 2018-19 because of higher productivity in recent times although the largest area was utilized for jute production in 1986-87. India had the greatest jute production (1959390 tons) in 1985-86 which was a little more than 2018-19 (1951864 tons). On the other hand, China provided the largest production (960000 tons) in 1985-86 which was 3148% of 2018-19 produce amount (Fig. 2).



**Figure 3.** The yield of jute in Bangladesh, China and India over the years (FAOSTAT, 2020)

The jute yield has been increasing in all over the years among these three different countries with a random fluctuating trend (Fig. 3). China always has greater yield than Bangladesh and India because of its high productive jute varieties and efficient production technique. In comparison to other countries, the productivity of jute cultivation is hardly satisfactory in Bangladesh. In recent periods, it has the far lower jute yield than China and India. For instance, in 2018-19, the yield of jute in Bangladesh was 21283 hg/ha which was less than China (36897 hg/ha) and India (25536 hg/ha). China (124%) and India (105%) have tremendous growth in jute yield from 1961-62 to 2018-19 while It is only 35% for Bangladesh (Figure 3).

### Comparative Scenario of Jute Export

With all over the world, Bangladesh had experienced a prominent change in the jute sector since the 1990s. Export performance of raw jute and jute goods tends to decrease over the last four decades after the Bangladesh liberation war. Bangladesh mainly trades raw jute, jute yarn, ropes, carpet, etc. (BB, 2019). Raw jute export volume was below 0.3 million tons during the 1980s and continued to fall till 2004 (Rahman and Khaled, 2011). During the last five decades, Bangladesh exported the highest amount of raw jute (1043729 tons) in 1963-64. In consideration of recent years, the export of raw jute tended to increase for the last two fiscal years. Since the last ten years, the highest export volume was in 2007-08, which was 652560 tons and the lowest volume was in 2014-15, which was 203610 tons (Fig 4). In comparison to 1961-62, the export volume has reduced to 62% in 2017-18. Despite the best position for jute production in the world, India exports less than Bangladesh because of their internal demand for jute.

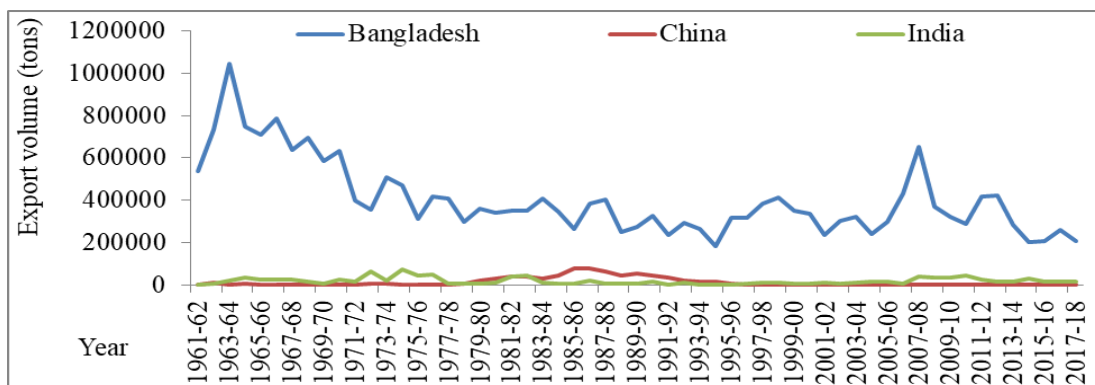


Figure 4. Export of raw jute from Bangladesh, China and India over the years (FAOSTAT, 2020)

Bangladesh exported the largest volume in 1963-64 but the greatest export revenue (USD 248 million) was earned in 2011-12. Alternately, the lowest amount of raw jute was exported in 1994-95 which was almost USD 47 million. Export earnings from China and India were far lower than Bangladesh as like as the lower quantity of export volume (Fig. 5).

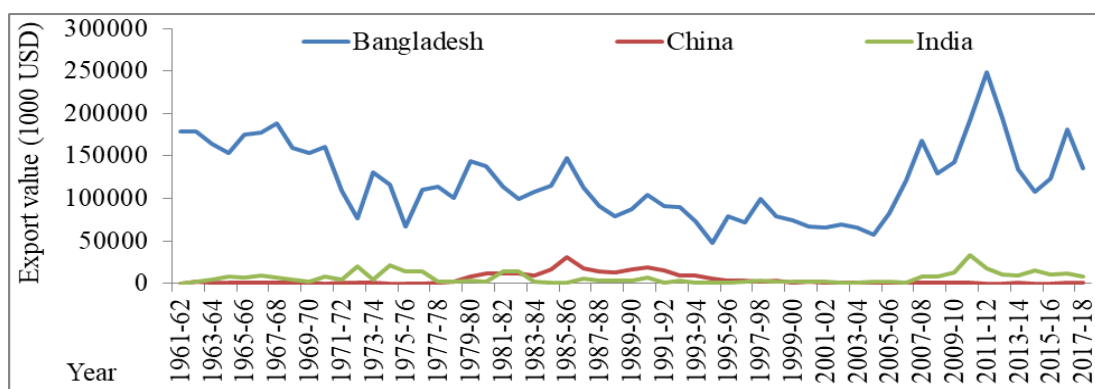
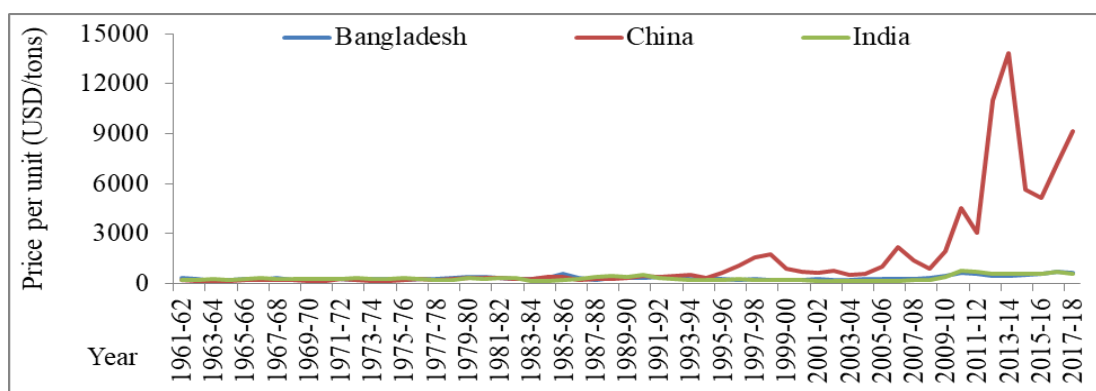


Figure 5. Raw jute export revenue of Bangladesh, China and India (FAOSTAT, 2020)

In terms of per-unit price of jute export, the scenario of Bangladesh is disappointing in comparison to China. In 2017-18, China exported raw jute at 9161 USD/tons, whereas Bangladesh and India received only 657 USD/tons and 544 USD/tons consecutively. The price soared to its apex in 2013-14 with 13833 USD/tons in China but it was much lower than that amount in recent years (Fig. 6).



**Figure 6.** Price of raw jute export in Bangladesh, China and India in over years (FAOSTAT, 2020)

Like the past decades, Bangladesh jute export was constrained in raw jute which was 60% of total jute export, although it has the potentiality to make more processed jute product by adding value to it (EPB, 2019). Three discernible phases are noticed in jute export growth rate over the last four decades from independence. During the 1970s jute and jute goods, export growth was positive. But, in the 1980s and 1990s, export under these items dropped down sharply with negative values. It was hopeful that, in FY2001-10, raw jute and jute goods export growth were 13.3 per cent and 6.4 per cent respectively (Rahman and Khaled, 2011).

**Table 1.** Share of raw jute in total export revenue and revealed comparative advantage of raw jute export in Bangladesh, China and India

Year	Bangladesh		China		India	
	Share of total export (%)	RCA	Share of total export (%)	RCA	Share of total export (%)	RCA
2001	4.73	778.13	0.26	0.20	0.003	2.64
2002	3.25	911.13	0.49	0.38	0.003	2.38
2003	3.44	1008.88	0.27	0.27	0.002	2.09
2004	4.27	973.69	0.17	0.22	0.002	2.40
2005	2.60	1025.33	0.06	0.07	0.002	2.58
2006	3.12	1043.70	0.04	0.03	0.002	1.84
2007	3.64	951.56	0.03	0.02	0.001	0.57
2008	2.82	764.87	0.02	0.02	0.005	4.25
2009	4.20	571.95	0.02	0.01	0.005	3.00
2010	2.83	482.48	0.04	0.02	0.006	3.40
2011	2.02	636.23	0.02	0.01	0.011	6.91
2012	3.72	558.13	0.01	0.01	0.006	4.76
2013	2.50	501.44	0.01	0.01	0.003	3.05
2014	2.36	395.43	0.01	0.01	0.003	3.20
2015	2.40	336.55	0.01	0.01	0.006	5.10
2016	2.53	367.17	0.01	0.00	0.004	2.81
2017	2.39	369.38	0.01	0.01	0.004	3.76
2018	2.69	494.59	0.02	0.02	0.003	3.36
2019	2.37	528.41	0.02	0.04	0.003	4.49

**Source:** Calculated from FAOSTAT and Trade map

### Jute Export Potentials and Comparative Advantages in Bangladesh

Jute export contributed USD 313.1 million export revenue that was 90% of total export revenue for Bangladesh in 1972-73 (EPB, 2019). Table 1 delineated that the share of jute earnings in total export income is higher in Bangladesh than India and China, as expected, even though the values are diminishing with times. The swift growth of garments sector export in the 1990s was the main reason for the reduction in the jute export share in whole export earnings. It is notable that, the scenario of jute export performance did not meet the expected numbers. But the good fact is, in 2017-18, the raw jute export value was USD 634 million, that was more than the total amount (USD 313.1 million) earned in 1972-73, although the share was remarkably lower than before. Alternatively, China's shares dropped gradually because of expanding their export bucket later in 2004. Besides, the situation is almost the same for India with leveled off shares among all over periods.

Bangladesh has been enjoying higher comparative advantages in jute export compared to China and India from 2001 to 2019 (Table 1). The higher RCAs indicate that Bangladesh is specialized in jute export than the average export specialization in the world. However, a matter of heightened concern for Bangladesh was the loss of comparative advantage overtime. Conversely, India's comparative advantage has been increasing between these periods. For specific jute product such as high-value carpets, India enjoyed price advantage with significantly higher RCAs than Bangladesh (Rahman and Khaled, 2011). Compared to Bangladesh and India, China has less comparative advantages which are less than 1 in jute export as they have a plethora amount of product range to export.

Since the 1990s, Bangladesh jute sector started to face crises as the progressive development of synthetic fibre which substituted natural fibre such as jute. The lower output price of jute than other crops, high input cost, lack of water for processing, inadequate market support and deficient extension service also harmed jute production (BJRI, 2008). All these adversely impacted the production and export of jute. The raw jute market faced high seasonal variability and deviation in prices. Government of Bangladesh fix minimum support price, but for lower regulations, the farmers do not get that price. This implication causes instability in the income level of the producers along with creating lack of interest to grow jute (Molla et. al., 2013). Furthermore, a lower amount of diversified processed product can't catch high-value markets (Islam and Alauddin, 2012). Meanwhile, lack of mechanized storage facilities at intensive jute cultivation areas creates problems of quality deterioration of raw jute (Molla et. al., 2013).

## CONCLUSION

Bangladeshi international trade with the rest of the world is extremely small relative to the size of its population, although it experienced accelerated growth during the last four decades. Export bucket of Bangladesh is not very diversified in comparison with its import products list. This creates problems of trade imbalance because import payments have persistently exceeded export earnings. The government of Bangladesh struggles to draw the attention of export-oriented industries and providing various financial incentive and tax exemption. Although Bangladesh jute products had faced lots of difficulties, the industry has got sunshine by government initiatives in recent years. The export trend of jute had increased after 2015-16. Bangladesh has a higher RCA value than the major competitive country like India. The vital challenge in jute export from Bangladesh is the low diversified product that can't catch the high-value market. More efforts are needed to improve the quality of the jute along with augmenting productivity by cultivating high yielding jute variety. An effective plan should be taken to increase the per-unit price of jute export by processing and sourcing new potential external markets. To enhance the productivity of jute production and jute industry more research should be done.

## CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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