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Sustainability of the Textile and Clothing Industry of Bangladesh Based on Existing Practice in Chinese Textile and Clothing Industry

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Abstract: The garment industry has become a pillar of Bangladesh's economy. More than 3 million people work in the garment and textile industries. The ready-made clothing industry (commonly known as RMG) accounts for nearly 81 per cent of Bangladesh's total exports. In countries that have not traditionally worked outside the home, this sector was the first to provide large-scale employment opportunities for women. However, the diversity of these challenges and the difficulty to overcome raises the question of the sustainability of their current growth and its future growth. The sustainability of this large industrial sector must be promoted. While the world's clothing markets and companies focus on environmentally friendly products, Bangladesh's clothing and textile industries go far beyond it, posing a risk of losing the world market. The time has come for a special strategy and a sustainable approach. The study highlights the measures that need to be taken to achieve sustainability.

In terms of the working environment, Bangladesh's garment industry is currently facing enormous challenges. Fire accidents, recent building collapses, minimum wages and many other problems are closely related to the sustainability of the textile and garment industry. At the same time, China is the world's largest producer of textiles and RMG. Although they have had such problems recently, they have taken enormous steps to alleviate all these major problems associated with the textile and garment industries and to promote their industrial and national economies. Therefore, the purpose of this paper is to find out the current problems and strategies to solve them according to the existing practice of China's textile industry.

Keywords: Textile, Bangladesh, China, RMG.

1. Introduction:

Textiles have long been an extremely important part of Bangladesh's economy for a number of reasons. China is the largest clothing exporter in the world besides Bangladesh is in the number

second. Ready-to-wear account 80 per cent of the country's \$24bn in annual exports and 15 per cent of GDP. Bangladesh's clothing exports will double in the next decade, according to McKinsey, a consultancy. In Asia, Bangladesh is one of the largest exporters of textiles, and a large part of the country's labor force provides employment opportunities. At present, the textile industry accounts for 45% of the country's total industrial employment and 5% of gross national income. Although the industry is one of Bangladesh's largest, it faces different types of challenges during the expansion, mainly because the country does not produce enough raw materials, unfavorable trade policies and insufficient incentives to expand. As a result, Bangladesh's textile industry is heavily dependent on imports, and the country's foreign exchange earnings from the textile industry are not as good as it should be. The textile and garment industry is one of the most competitive manufacturing industries in the world due to the increasing demand for sustainable garment design, environmental change, market competition, unpredictable consumer demand, market trends of varieties, short product life cycles and low entry barriers. As a result of improved transport systems, technology transfer and government cooperation, barriers to inter-country trade have been reduced and the globalization and competition of tourism have increased rapidly. All textile factory associations and individuals in Bangladesh need to improve the quality of their products. However, RMG's sustainability can only be achieved by addressing challenges in certain areas, including infrastructure, compliance, labor supply, supplier performance, raw materials, and political stability.

At the same time, China's textile industry in the overall production and export are the world's largest garment manufacturers. In 2013, China exported \$274 billion in textiles, almost seven times as much as India, which is the second largest exporter, with \$40 billion in exports. 43.1 per cent of global clothing exports.

China's textile industry has become a key player on a global scale, being one of the country's first markets to open up. In 2018, Textile exports from China reached 37.6% of the world's total in 2018, a 3.5% increase from the previous year, while apparel exports accounted for 31.3% of the world's total.

It is reported that by 2018, China's textile industry has invested \$6.5 billion in countries along the Belt and Road. China's textile industry has been investing steadily in overseas, upstream and downstream. As a result, China is dominating the world textile and clothing market by making

different large-scale infrastructure and economically friendly decisions with the help of local governments and moving towards sustainability.

1.1. Present Situation of the RMG Industry:

Although a quarter of Bangladesh's 170 million people still live below the poverty line, Bangladesh has grown almost every 6 per cent since the turn of the millennium, thanks in large part to clothing exports, which have become the lifeblood of its economy (Ford, 2016). Bangladesh is now the second largest exporter of RMG after China (McKinsey, 2011). Bangladesh's top three clothing export destinations were Europe at \$12.6 billion, followed by the United States and Canada at \$5 billion and \$980 million, respectively (ibid.).

61% of the 348 apparel importers surveyed on the InTouch website since October 2016 said they purchased clothing from at least one of the countries. China remains the most popular choice, at 21%, with Bangladesh and India in second place with 14%, followed by Vietnam with 12%. Higher wages in China will force more garment importers to shift production to less developed countries such as Bangladesh at a lower cost. By proactively managing product quality, Bangladeshi garment exporters have the potential to achieve their desired goals.

On the Contrary, China is now the world's biggest textile exporter and market, with advanced manufacturing and additional investments placed by Chinese companies around the world.. HONG KONG — December 2, 2019

Xu Yingxin, vice president of the China National Textile and Apparel Council and Chairman of CCPIT-TEX (co-organizer of the fair)

In 2018, Textile exports from China reached 37.6% of the world's total in 2018, a 3.5% increase from the previous year, while apparel exports accounted for 31.3% of the world's total.

Despite a slight slowdown in purchasing power, china's textile industry is still experiencing high demand in the domestic market, despite a slight slowdown in purchasing power and a growing number of Chinese consumers being cautious about overspending. Because of the size of the population, the industry also has a safety net in clothing, which is a basic necessity. Domestic apparel retail sales grew by 8% in 2018 and continue to grow in 2019, although at a slower pace than in previous years.

1.2.Apparel Manufacturing Industry and Sustainability:

Despite Bangladesh's growing garment or garment manufacturing industry, it is beginning to face benefits in different ways. In the initial stage, more preparation garment factory began local

domestic clothing. After a while, it began to receive sub-orders from other large former import and export companies in Bangladesh and grew into a large independent garment factory. Second, from the very beginning of the establishment, did not follow the industrial structure or policy. In addition, many workers come to work in small factories directly from the village home who previously worked in agriculture or have no work experience. The lack of proficiency and lifestyle in cities in cities will make people the victims of the most aggression and tragedy. The country's lack of well-planned infrastructure is one of the biggest obstacles to Bangladesh's stinging sustainability. As part of sustainable development, China has launched different new initiatives. "Belt and Road" is one of the largest projects in China's development strategy. The Belt and Road Initiative was first launched in 2013 and became one of China's three major national development strategies in 2014. As of July 2019, the Chinese government has signed cooperation agreements with 136 countries along the route, which runs across three continents. In the first five years of the initiative, total trade between countries along the Belt and Road route exceeded \$6 trillion, accounting for nearly a third of China's total trade in goods during the same period.

The textile industry deals with most of the industry. It is reported that by 2018, China's textile industry has invested \$6.5 billion in countries along the Belt and Road. China's textile industry has been investing steadily in overseas, upstream and downstream.

These investments, both domestic and overseas, have two main directions.

First, create global production capacity by establishing an efficient manufacturing base in China. Countries in Africa and along the route are accompanied by the "Belt and Road" route.

Second, international cooperation to strengthen resources (raw materials, design, research and development and even marketing) throughout the supply chain. Vietnam received the highest investment from 2015 to 2018, followed by Ethiopia, Myanmar, Egypt, Cambodia, Malaysia, Pakistan and Tajikistan. Through all these important steps, China is moving towards sustainable development.

2. Methodology

The research follows the quantitative methodology. In references, it cited previously published and contemporary research papers, books, magazines, and periodicals by government and semi-government NGOs, surveys, newspapers and online verified videos etc. The research also carried out face to face interviews with different garment factories female workers and also its managerial

bodies. This indeed added value to the primary information obtained through conducting surveys and interviews

3. Discussion of problems and challenges for rapid growth:

Compared with many, particularly in the cotton sector in Bangladesh, the lack of research and development in many sectors, particularly in Bangladesh has led to low cotton quality. Since the profitability of cotton crops is then low, farmers are turning to other cash crops, such as sugar cane. It is the lack of proper R and D that leads to this state. They also blame cartels, particularly in the pesticide industry, for hampering the major challenges facing Bangladeshi textile and garment manufacturers, as follows, as is the case with all these problems in China's textile industry.

Lack of Modernize Equipment:In addition, critics say the textile industry's equipment and machinery are outdated. The competitiveness of Bangladeshi textiles has declined owing to the inability to modernize equipment and machinery in a timely manner. Production costs in Bangladesh are high due to technological backwardness.

And the Chinese garment industry is equipped with all modern facilities. This makes China the world's number one clothing supplier,

One thing is certain about China's diminished role as a global clothing supplier: China looks set to continue to dominate the international textile industry. In fact, new data shows that China remained the biggest investor in spinning, textured, weaving, knitting and garment manufacturing machinery last year.

3.1.Finance Bill to Burden Industry Further:

The Bangladesh Textile Stoinity Company said the government's actions were not in line with its expectations for the textile industry and steady growth. He believes that the reintroduction of the minimum domestic sales tax will trigger inevitable liquidity problems, which have reached alarming levels. In addition, the textile industry is also facing the problem of negative capital generation, on the one hand, the unbearable rate of price increases, on the other hand, a serious shortage of energy supply, industrial electricity prices are unimaginable, interest rates rise, double-digit inflation, the devaluation of the Bangladesh Taka. The above reasons increase the production cost of the textile industry, which causes problems to the competition of the textile industry in the international market.

Instead, the Chinese government has taken different steps to strengthen China's textile and garment industry. To reduce losses to other countries, the Chinese government has encouraged

manufacturers to shift production to cheaper provinces in central and western China, with plans to invest \$8 billion in xinjiang, a cotton-growing province, in the west to attract textile and clothing companies. For some clothing manufacturers, this is certainly a promising proposition, as tax breaks, rents and electricity subsidies make it a "near-guaranteed profit".

3.2. Skilled labor:

Is skilled labor necessary for manufacturing garments?

Clothing manufacturing is usually a low-skilled job, so clothing importers may not be particularly concerned about the skilled laborforce. However, skilled workers in management positions increase plant efficiency and productivity, thus reducing production time. The World Economic Forum (WEF) Human Capital Index measures the knowledge and skills embodied by individuals through educational indicators, enabling them to create economic value. By this measure, Vietnam has more human capital than China, while India lags behind, even Bangladesh.



Bangladesh, in particular, faces a shortage of skilled labor in the readymade garments(RMG) industry.

3.3. Product Diversification:

Of Bangladesh's total exports, 79 per cent were concentrated in five basic products: trousers, T-shirts, sweaters, shirts and jackets. Without sufficient skilled labour, Bangladesh will struggle to

diversify its production and produce more high-end clothing and textiles.

Year	Shirts	Trousers	Jacket	T-Shirts	Sweaters
2009-10	993.4	3,035.4	1,350.4	3,145.5	1,795.4
2010-11	1,566.4	4,164.2	1,887.5	4,696.6	2,588.2
2011-12	1,733.5	4,686.4	2,231.2	4,713.1	2,340.3
2012-13	1,972.9	5,185.5	2,634.3	5,143.2	2,620.7
2013-14	2,173.7	5,690.8	2,973.2	5,863.8	2,932.9

Table 1: *Main Apparel Items Exported from Bangladesh (value in US\$ million); source: BEPB*

In contrast, some of China's most advanced garment factories have found a diversified market through the production of lower quality, more technologically advanced clothing. Technical clothing, also known as "technical clothing", includes special fabrics and technical products, with breathability, sportiness, water resistance and comfort. Manufacturers can sell these garments at higher profits, offsetting higher labor costs.

3.4. Trade-related infrastructure for garment Industry:

3.4.1. How poor infrastructure can end up damaging your brand's reputation:

Poor economic development can disrupt your supply chain in unpredictable ways. As the 2013 Rana Plaza collapse and low-key textile factory fire proved, garment production in less developed countries does not pose a significant risk to brand reputation (related: social compliance in garment factories: how to avoid disaster). Asian clothing manufacturing data compiled in 2013 ranked first, with more than one factory fire per week in Bangladesh.

In addition, **China** is leading the influential areas related to infrastructure.³ Reasons China Remains Competitive for Importers, including:

Burden of customs procedure — ranked on a scale of 1–7, with 7 — being the most efficient.

Timeliness of shipments — ranked on a scale of 1–5, with 5 being most timely.

Quality of overall infrastructure — ranking on a scale of 1–7, with 7 being highest quality

Country	Burden of customers procedure (2016)	Timeliness of shipments (2016)	Quality of overall infrastructure (2016)
China	4.4	3.90	4.5
India	4.6	3.74	4.5
Vietnam	3.5	3.50	3.6
Bangladesh	3.3	2.90	2.8

Numbers indicate that China has better infrastructure development than Bangladesh, Vietnam and India

All of these indicators point to better infrastructure development in China than in the other three countries.

Increased transport times to ports, slower processing times at customs and frequent power shortages can mean production pauses, as well as lead times for clothing. It may take longer for inspections or audits of factories in less developed countries of the transport system, as it may take longer for inspectors to arrive at the plant. Many manufacturing regions of China have extensive high-speed rail networks, subway systems and bus lines. But in countries such as Bangladesh, Vietnam, India and Pakistan, public transport systems are much less developed.



3.4.2. Manufacturing efficiency with well-developed supply chain connections:

A major obstacle for Bangladeshi garment importers is the fragmentation of local government policies in different geographical locations in the country.

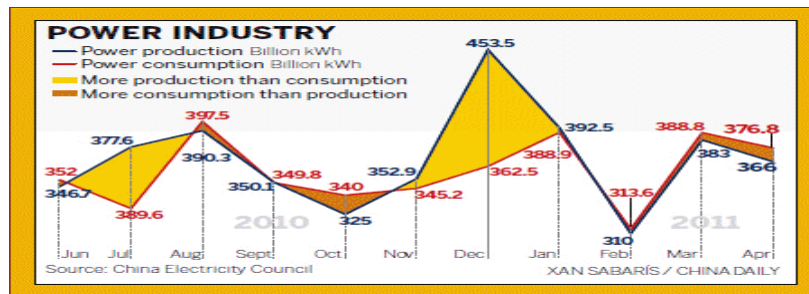
Vietnam continues to perform significantly better than Bangladesh and India in terms of ease of doing business. Although Vietnam's labor costs are not as low as Bangladesh's, stable economic policies and a focus on international trade make it more like China. Many Taiwanese factories previously set up on the mainland have moved to Vietnam to take advantage of lower labor costs.

These plants already have well-established systems and processes. As a result, employees can get up and running quickly at a level of efficiency.

However, access to quality textiles is a common problem that may increase lead times. Many factories still source high-quality fabrics from China, which are then cut and sewn in Vietnam. But Vietnam's proximity to China makes it easy to transport raw materials.

3.5. Energy Crisis:

Electricity Crisis and Gas Shortage: As a result of the electricity and gas crisis, textile production capacity in various subsectors has been reduced by up to 30 per cent. A spokesman for the Bangladesh Textile Factory (BTMC) said 60 to 70 per cent of the textile industry was affected and could not accept export orders from around the world. Months of continuous gas disconnects have resulted in huge production losses and seriously affected the industry's capabilities. For the greater benefit of the economy and exports, the government should "ensure that utility companies provide smooth electricity and natural gas supplies to the textile industry".



Although China is currently in the midst of an electricity crisis, government officials are working on plans to build new power lines in the areas most affected by the power crisis. More low-emissions are expected, and coal-fired power generation is expected to be generated by ultra-high voltage power lines.

3.5.1. Electricity generation

In 2007, China's energy demand has exceeded that of the European Union, the United States in 2010, and North America in 2013. The annual balance of power generation (EIA, 2014) is shown in the table. Although China's ranking is 1, the overall balance is not far from that of the United States, which only accounts for 23% of China's population and the United States' population has declined by 20%. This is a very important indicator related to all major aspects of this analysis.

Table : Electricity generation

Ranking	Country	Billion kilowatt-hours
1	China	5388.172
2	United States	4103.141
3	India	1217.709
4	Russia	1005.55
5	Japan	979.841
6	Canada	632.802
7	Germany	591.064
8	Brazil	577.089
9	France	533.574
10	South Korea	513.298
11	United Kingdom	316.896
12	Saudi Arabia	293.137
13	Mexico	286.414
14	Italy	267.003
15	Spain	264.297

3.5.2. Coal

China ranks first among the world's coal producers. Its productivity is more than four times that of the United States, almost six times that of India, a country with a similar population. Although in this leading position, the coal produced is not enough to meet the needs of the current national energy balance, so China is also a leader in coal import. The impact of this gap on China's infrastructure scenario is significant. Although significant progress has been made in energy alternatives, China's energy pattern in the coming decades will still be based on coal.

3.5.3. Petroleum

China is the world's second-largest oil consumer, even though related energy production accounts for only 17.5% of the total balance. In terms of crude oil imports, China is slightly lower than the United States, which is 333 metric tons, compared with 348 metric tons in the United States. On the other hand, China is only the sixth largest crude oil producer, just like Iran. As some authors have predicted and stressed, China's dependence on imported oil is expected to increase unless unconventional fuel is produced from coal. Fine chemical and petrochemical industries also rely heavily on imported raw materials.

3.5.4. Natural gas

In terms of natural gas, despite the continuous development of the world trend and the specific increase of us production, China's natural gas production is very low, accounting for 3.8% of the world balance, which is equivalent to the sixth place in the world. On the contrary, China is the third largest producer of natural gas, although the share of energy covered by this resource is very low, at 5.6%.

3.5.5. Nuclear electricity

China is only the fourth nuclear power plant with large production and net installed capacity. Its production capacity is only one fifth of that of the United States. As far as the contribution of nuclear energy to China's energy balance is concerned, China's domestic power generation is only ranked 10th in the world.

3.5.6. Hydro electricity

China's hydropower production ranks the top in the world, three times that of Canada and Brazil, and four times that of the United States. Net installed capacity is about three times that of the United States and Brazil. The corresponding domestic power generation is 19.3%, about twice of the total energy consumption.

3.5.7. Solar photovoltaic electricity:

The power generation capacity and net installed capacity of solar photovoltaic power generation system in China rank first in the world. Nevertheless, the country's share of electricity generation is still eighth.

3.5.8. Energy purpose distribution

Apart from being the largest consumer abroad, China's industrial energy accounts for more than 50% of the total energy consumption, while the other four contributing countries do not allocate more than 20% - 25% (the United States, Russia and Japan) and 30% (India) in this respect. This is very special in China, he stressed this point. Based on energy consumption, these authors believe that China's economic model is significantly different from the traditional extensive economic growth. In addition, the ratio of transportation to industry in China is far below 1, and that in India is far below 1. As expected, the ratio of transportation to industry in the United States is much higher than 1, while that in Russia and Japan is around 1. This is a very interesting indicator. Mr.

Hao is particularly concerned about this. The total energy consumption and single energy consumption expressed in million tons of oil equivalent (mtoe) are given. It should be noted that

3.5. Lack of new investment:

Bangladesh's textile industry is facing low productivity due to the old textile machinery. In order to overcome this problem and gain a foothold in the competition, the Bangladesh textile industry will require significant investment. Over the years, the trend of spinning investment has continued. Bangladesh faced external and internal problems that constrained new investment. The unpredictable internal conditions in Bangladesh have led to a rapid decline in foreign investment, affecting all industries, particularly the textile industry.

3.6. Poor Wages :

3.7.1. Labor costs: The advantage of Bangladesh:

The clothing industry, sometimes referred to as the "rag trade", usually chases the next pair of cheapest hands, which is no longer for people. As a result, clothing production has increased in Bangladesh over the past decade, as well as in India, Viet Nam and countries such as Pakistan and Cambodia. Bangladesh is the largest garment producer with a minimum wage of 5,300 taka (about \$65) per month for garment workers. Wages are higher in India, China and Vietnam, but lack national minimum wages due to regional economic development.

Monthly minimum wage (USD)	
China, 2016	\$150 - \$338
India, 2015	\$116 - 209
Vietnam, 2016	\$116 - 166
Bangladesh, 2013	\$65

3.7.2. Rising labor costs in China

In fact, importers of low wages have undermined china's competitiveness and are emerging from the traditional heart of the eastern coastal provinces of Chinese garment production, a number of high-rise basic garments.



In Shanghai, the monthly minimum wage is the highest at 2,300 yuan (\$338), while similar in other first-tier cities, such as Beijing and Shenzhen. The minimum wage in small provincial and county-level cities can be as low as 1,000 yuan (\$150). But even these low interest rates cannot compete with other countries, comparing labor costs only.

To reduce losses to other countries, the Chinese government has encouraged manufacturers to shift production to cheaper provinces in central and western China, with plans to invest \$8 billion in xinjiang, a cotton-growing province, in the west to attract textile and clothing companies. For some clothing manufacturers, this is certainly a promising proposition, as tax breaks, rents and electricity subsidies make it a "near-guaranteed profit".

3.7. Overtime Working:

Too long overtime is another problem. In Bangladesh, workers often work overtime because they earn extra money to pay the high cost of living. In many cases, workers are forced to work overtime to meet the timely needs of suppliers. Under Bangladesh's 2006 labor law, eight hours per day includes standard working days and six days per week. As a result, 48 hours per week is considered to be working weeks and can be extended to a maximum of 60 hours, including overtime. Bangladeshi garment workers work an average of 76 hours a week, a far cry from the standard weekly work.

3.8. Gender Equality:

The expansion of the garment industry in Bangladesh offers great opportunities for women workers. In 2004, the number of 1.8 million garment workers in 3,480 factories was 1.5 million. According to the latest report, there are 6,500 factories with 4 million workers, 85 per cent of whom are women.

Lack of education and job skills, and women do not have access to clothing, even at low wages. Before employment, most of them were unemployed and used to work in housework or agriculture. The clothing store owner took the opportunity to offer lower wages to these women who had just moved from the village. Many literatures indicate that most women workers are unmarried and younger. One researcher claims that about 40 to 50 percent of women workers are married and even have working mothers.

3.8.1. Major problem faced by Women workers:

- Salary Discrimination between Male and Female Workers
- Sexual harassment by superiors and male colleagues
- Verbal abuse and Mocking
- Inadequate Maternity and Sickness Leave

In China, the situation is no different. According to the All-China Federation of Trade Unions, the number of women workers has grown by nearly 63% since 1988.

Female factory workers often face many challenges at work, with lower wages and jobs. Gender inequality is another concern- a 2010 Peking University survey of 3,000 workers found that sexism in the workplace is rampant in recruitment, pay, promotion, rights and retirement. Although China has always placed greater emphasis on gender equality than many countries in the region, such as Bangladesh, India and Vietnam. Gender remains an important factor in determining who does what.

3.9. Fire Safety and Security Risk Factors

Bangladesh's clothing industry is one of the safest in the world. In recent years, fire accidents have been frequent due to infrastructure and safety risk management issues. The recent collapse of factory buildings adds another danger to the garment industry. According to the Bangladesh Fire Service, between 2006 and 2009, some 414 garment workers were killed in 213 factory fires. In 2010, about 79 workers died in factory fires. From 2012 to April 2019, fires in Bangladesh killed 1,304 people and injured 3,877.

3.10. Building Collapse:

The collapse of buildings has become the second most harmful to the garment industry. The main reason for this is the unauthorized and unplanned structure of the building. Many garment factories illegally extend buildings upward without proper permission. The foundations of the building do not support additional load, so the building collapses. For example, Rana Plaza in Sarwar is an

eight-story building, but it only allows four floors. The upper four floors collapsed in April 2013, killing 1,129 workers.



3.11. Trade Union:

The garment union is not fully operational. Unions and trade unions are mostly associated with state political parties. Instead of focusing on the issue of garment workers, union leaders are often busy with the country's main political parties. As a result, trade unions do not function in most industries. Only a few trade unions are active. Poor trade union structures result in negligence on workers' rights, as well as adverse results in different practical problems such as wage calculations, women's inequality and harassment.

4. Conclusion:

This research could lead to a new era of social and environmental sustainability practices in garment manufacturing. This study will further reduce the risk in this sector. In addition to the proposed sustainable approach, the study will also demonstrate better practices and approaches for China's textile processing industry, especially in the garment manufacturing industry, and help to rebuild garment policies and regulations in the light of the practical problems in China's textile and garment industries.

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Dedication

Not mentioned.

Conflicts of Interest

There are no conflicts to declare.



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