

Green Revolution in Ready Made Garments in Bangladesh: An Analytical Study

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ABSTRACT

Bangladesh, a small south Asian country, holds the second position in the world of exporting readymade garments (RMG). Here locate the highest number of green RMG factories in the world. Green industrialization is the positive symbol of sustainable development. This paper represents an impressive illustration of the scenario of RMG industries in Bangladesh especially the growth, contribution to export and the success of LEED (Leadership in Energy and Environmental Design) recognized Platinum, Gold and Silver factories. This paper also represents the success of green revolution in RMG industries in Bangladesh and recommends some suggestions to convert the traditional industries to green industries where the industries are not only for making profit but also committed to provide good working environment for employee, eco-friendly and ethical business practice.

Keywords-- RMG Sector, Growth, Contribution to Export, Green Revolution

export earnings and 8.15% of GDP (in 2019) of the country. This industry also plays a pivotal role in creating job opportunities for the poor, uneducated or half-educated and in the overall socio-economic development of the country. Another good news for Bangladesh is that the highest number of green industries are available in our country as per USGBC (United State Green Building Council) which indicates the sustainable development of RMG sector. The readymade garments industry is playing the main role for the economic development of Bangladesh. This sector has brought glory for the country and holds the “Made in Bangladesh” flag ever high. Bangladesh was once upon a time termed as bottomless basket, but with the passage of time this country is now known to the world as a country of wonders. Despite of having so many limitations Bangladesh has been maintaining on an average stable annual GDP growth rate which is 6% and has made mentionable social economic development.

I. INTRODUCTION

Bangladesh is an agro based country. Agriculture had been leading the sector of Bangladesh economy and also the main source of income for the people. But the contribution of industry is increasing day by day. Once upon a time this area was also famous for Moslin cloth and ship building industries in Chattogram. But by the passage of time those industries lost their reputation. Now the lion share of export earning is coming from RMG. There are so many promising industries in Bangladesh and among them Ready Made Garments (RMG) is playing the leading role. Bangladesh has earned a remarkable reputation in the international arena by exporting quality products produced in Ready Made Garments (RMG) and holds a good position in the world market. Within a short possible time, this sector has attained a remarkable position in earning the highest number of foreign exchanges by exporting their products to the global markets and thus contributed to GDP. This sector accounts for on an average 83% of total

II. OBJECTIVES OF THE STUDY

This paper will focus on the present scenario of the RMG industries in Bangladesh. The particular objectives of this paper are as follows:

- To identify the succeeding factors of green revolution in RMG industries in Bangladesh.
- To highlight the benefits of green garments industry.
- To recommend some suggestions to convert the traditional industries to green industries and to promote a healthy industrial environment in Bangladesh.

III. METHODOLOGY

Basing on the primary and secondary data, this study has been conducted. To complete the research study, the secondary data was collected from various journals, research articles, newspaper, thesis papers, online news

and BGMEA annual reports. For gathering primary data, we have selected different Ready Made Garments companies in Dhaka city through discussion with concerned professional. So, the target population of this study was readymade garments industry of Dhaka division. The survey was conducted on 05readymade garments industry as sample items.

IV. FINDINGS AND DISCUSSION

a. History and Growth of Ready-Made Garments in Bangladesh

In 1971 a small agro based country took birth and there was no remarkable industrial development in this country. The readymade garment (RMG) industry emerged as a savior in the industrial sector of the new born country. This industry has contributed a lot for rebuilding the economy of Bangladesh. Till now the lion share of export earnings of this country comes from readymade garment (RMG) industry. Once Bangladesh was much known to the world for her "jute industry" but that industry could not hold its glory as jute started losing its demand in the world markets. Later RMG sector replaced it. The Ready Made Garments industry in Bangladesh has come to this position today, crossing so many ups and downs which journey started in the 1980s. Late Nurool Quader Khan was the pioneer of the readymade garments in Bangladesh. He dreamt of developing the RMG sector of the country. In 1978 Mr. Khan sent 130 people to South Korea to learn how to produce readymade garments. Later he established

the readymade garments factory with those 130 skilled man power and started exporting based productions. Some other mentionable forerunners in the Ready Made Garments industry of Bangladesh are M Samsur Rahman of Stylecraft Limited, the first president of BGMEA, late Akhter Mohammad Musa of Bond Garments, Major (Retd) Abdul Mannan of Sunman Group, Md Humayun of Paris Garments, late Mohammad Reazuddin of Reaz Garments, Engineer Mohammad Fazlul Azim of Azim Group, AM Subid Ali of Aristocrat Limited.

Afterword some promising and enthusiastic businesspersons started readymade garments business in the Bangladesh. Since then the readymade garments need not to look back further. The long journey was not so smooth rather over the past decades this sector had to cross a long difficult way to reach the present state. The Multi-Fiber Arrangement (MFA) quota played an important role to develop our readymade garments industries to a great extent, when the quota was stopped in 2004, many of us predicted a massive upset might be there in our export.

However, continuity of success remains in the post-MFA era. We overcome the post MFA challenges, proving all the predictions wrong. Currently the RMG industry holds its top most position in the table of export earners for Bangladesh. In 2019-20 financial year this sector earned over \$27.9 billion by exporting their products worldwide and holds the second top most position in the world readymade garments market.

Table 1: Comparative Statement on Export of RMG and Total Export of Bangladesh of Last 10 Years
(In Million US Dollar)

Year	Export of RMG	Total Export of Bangladesh	% of RMG's to Total Export
2010-11	17914.46	22924.38	78.15
2011-12	19089.73	24301.90	78.55
2012-13	21515.73	27027.36	79.61
2013-14	24491.88	30186.62	81.13
2014-15	25491.40	31208.94	81.68
2015-16	28094.16	34257.18	82.01
2016-17	28149.84	34655.90	81.23
2017-18	30614.76	36668.17	83.49
2018-19	34133.27	40535.04	84.21
2019-20	27949.19	33674.09	83.00

(Source: BGMEA)

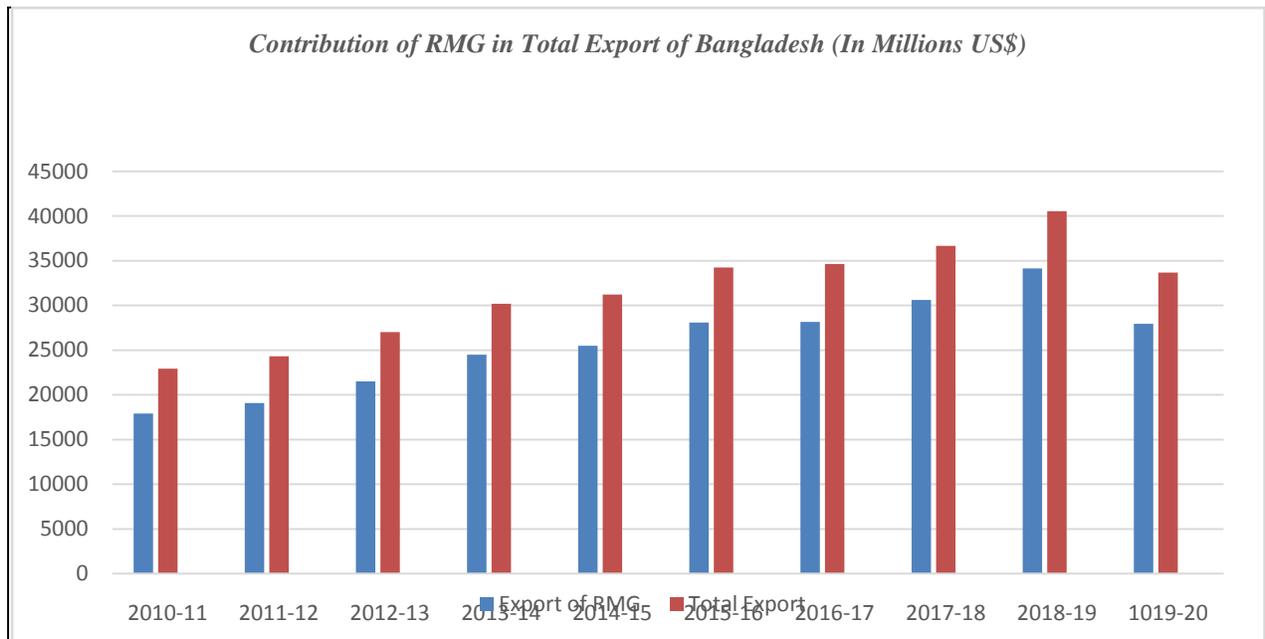


Figure 1: Contribution of RMG in Total Export in Bangladesh (In Millions of US\$)

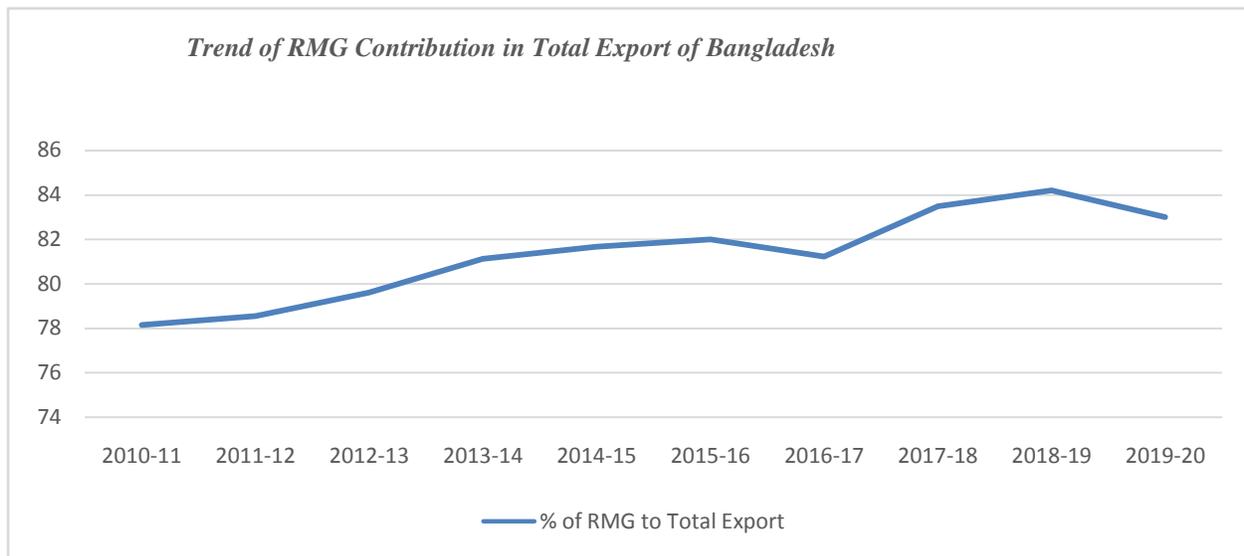


Figure 2: Trend of RMG Contribution in Total Export of Bangladesh

b. Green Industry

To reduce environment pollution and climate change, sustainable development in industrial sector is a crying need. To meet up this challenge, the concept of Green Industry has been developed by The United Nations Industrial Development Organization (UNIDO). It denotes the encouragement in investment the industrial growth in a more sustainable and environment friendly way. This is an effective way to attain sustainable economic growth and promote sustainable economies. Besides, the government

is giving more emphasis on the sustainable development by making different policies.

Way to Green to Revolution

Generally, factories use ground water, different chemical, imported raw materials, buildings designed in unplanned ways and energy for production and operation. From the beginning of RMG industrialization in this country, a substantive amount of ground water and hazardous chemicals have been used for dyeing and washing and other activities. Most of the firms could not

use ETP (effluent treatment plants) in production due to lack of investment and awareness. It seemed to be a culture of pollution by throwing waste materials and hazardous by-products here and there. In RMG history of Bangladesh, the term “Rana Plaza tragedy” (April 2013) is not only a black chapter for this country but also for the world which killed 1,134 and injured more than 2,000 people. After that environmental safe-guard is now a great concern from both the buyers and entrepreneurs.

Now, entrepreneurs, buyers, and related stakeholders have a great concern to make the sector more environment friendly. This country now needs immediate attention for cleaner production. Over the time, entrepreneurs of Bangladesh have understood the negative effects of industrialization on the environment. They are now more concerned about the environmental effect, pollution, climate and social consideration.

To make the business sustainable and eco-friendly the entrepreneurs are running effluent treatment plant (ETP), using energy efficient technology and installing renewable energy technology (Reza, 2017). In this regard, going green is one of the most effective processes to the entrepreneurs. Now the RMG entrepreneurs are getting interested in green production by which both less production cost and eco-friendly production can be ensured. Green technology not only helps RMG entrepreneur brand their products but also helps them significantly minimize the energy uses by 40% and water consumption by 30%. Green building means less carbon emission which saves our environment greatly. In this process while constructing the infrastructures the owners of the factories have to abide by some certain rules which ensure a safe healthy workplace for the workers.

c. Preconditions of Green Industries

Sustainable Sites

The owners of the green industries need to select the location of industry with utmost sincerity because some essential facilities are needed to locate within 500 meters like schools, markets, bus stoppages, mosques etc. To encourage the use of non-fossil fuel transport, the site also arranges parking facilities for bicycle users.

Harvesting Rain Water:

The factory site carefully controls every drop of water. A well-defined rain water plant preserves rainwater in a tank and later this water is re-cycled for the purposes of irrigation and toilet flushing.

Heat Island Effect

There cause some differences in thermal gradient between two areas where one area is developed and another one is undeveloped. The heat island reduction minimizes the thermal effect on the local micro climate and the surrounding bio diversities. For roofing purpose green industries have to install some materials with a high

Solar Reflection Index and Hardscape areas with light color reflecting paving blocks.

Reducing Ozone Depletion

For air conditioning, insulation and chillers, green industries need to install refrigerants which are free from CFC gas. This harmful gas contributes highly to global warming by containing ozone depleting substance.

Ensuring Indoor Environmental Quality

Improved indoor environmental quality ensures safe and healthy workplace in green industries. To ensure maximum flows of natural air the owners of green industries focus much on interior designs. As the building materials are low emitting materials, it ensures the thermal comfort at workplace. Well organized production floor and good compliance maintenance ensure safe workplace to the workers in the green factories.

d. LEED Rating System

Green buildings are the symbol of healthy, sustainable and safe residing for the people of the community. The main thing of our green buildings is while constructing these buildings main focus is given on issues which indicate healthy and safe living. All people should have a safe and sound place to live, work, learn and play. It is a right for everyone to lead a long and healthy life.

The main aim of ranking system is to certify the industrial as well as all high-rise buildings. Seven main categories and two bonus categories are included in this system.

1. Integrative Process (IP)
2. Location and Transportation (LT)
3. Sustainable Site (SS)
4. Water Efficiency (WE)
5. Energy and Atmosphere (EA)
6. Materials and Resources (MR)
7. Indoor Environmental Quality (IEQ)
8. Innovation in Design (ID)
9. Regional priority (RP) (Kaizer, 2020).

Table 2: LEED certification scorecard with seven base categories

Base Categories	Points
Sustainable site	26
Water efficiency	10
Energy and atmosphere	25
Material and resources	14
Indoor environmental quality	16
Innovation and design	06
Regional priority	04
Total	100

Table 3: The different categories of LEED certification basing of earned points (Kaizer, 2020)

Name of Certificate	Points	Symbol
Platinum	80 +	
Gold	60 - 79	
Silver	50 - 59	
Certified	40 - 49	

(Source: BGMEA)

e. Green Industries in Bangladesh

At present 90 LEED (Leadership in Energy and Environmental Design) green factories certified by USGBC (U.S. Green Building Council) and 250 more factories registered with the USGBC for LEED

certification are there in Bangladesh. So it is really a matter of great pride that this small country has the highest number of green RMG factories in the world. In addition, Bangladesh has 24 platinum-rated factories in which six of those have been ranked among top 10 green factories of the world (Kaizer, 2020).

Table 4: Top Nine LEED Certified Industries of Bangladesh

Name of the industry	Points
Rami Holdings Ltd	97
Plummy Fashion Ltd	92
Vintage Denim Studio Ltd	90
SQ Celslus 2	85
Genesis Washing Ltd	83
Genesis Fashions Ltd	81
SQ Colblanc Ltd	81
SQ Birichina Ltd	81
Envoy Textiles Ltd	80

(Source: BGMEA)

Rami Holding Limited

Rami holding limited starts her journey at Adamjee EPZ Narayangong. This industry has earned the highest LEED points 97 out of 100 from the USGBC and secured first position in the world as a green industry. Around 2500 labors are working in this factory having a very good working environment. They have water treatment plant so they can reuse water, use solar panel for reducing electricity consumption, garden inside the factory.

Similarly, to raise the temperature of inlet feed water, the heat from the flue gases is reused by the factory. For this the factory uses a heat exchanging device economizer with the boiler. As a result, less fuel is consumed and the overall efficiency of the boiler is improved. Practically, it ensures the optimum energy consumption, using daylight, LED instead of CFL, modern machineries with inverter technology, servo motor, etc.

Plummy Fashion Ltd

Today’s business concerns are mostly responsible for damage to the ozone layer and it causes global warming. Ultimately it results in climate change and the loss of biodiversity. So in today’s business world, while planning for any sustainable business plan the entrepreneurs focus much on the protection of environment.

Plummy Fashions Ltd (PFL) has begun a new advanced project; The Green Knit Apparel Manufacturing Unit. The directives of the U.S. "LEED" and the U.S. Green Building Council (USGBC) are followed in this project. PFL has shown others how a sustainable and accountable business can be practiced in Bangladesh. Definitely this will be a role model for all manufacturers.

Plummy Fashions Ltd is in Narayanganj, 20 kilometers south from Dhaka city. It covers 5.5 acres of land. Beside surface water, rain water is also reused here. For re-cycling this water, PFL has a natural water management system. Moreover, there is a hospital in the factory area. Immediate medical requirements of all employees are met here by two full-time doctors and nurses. PFL has created a pleasant working environment for the employees.

Plummy Fashion Limited has also a fire protection system of high quality. Beside sufficient fire extinguishers, a good fire detection system remains super vigilant here to monitor and address any fire incident inside the factory. For an example, the factory is equipped with more than 250 smoke and heat detectors to detect fire in any compartment. For any fire accident, the central control room identifies the area immediately and manages a safe and prompt evacuation for all.

Moreover, the factory is blessed with a natural lake passing through it. This lake works as a water reserve and ensures a balanced eco system.

Envoy Textiles Limited

Envoy Textiles Limited is located in Mymensingh, Dhaka, Bangladesh and is a part of the Textile Manufacturing Industry. Envoy Textiles Limited has total 700 employees across all of its locations and generates \$104.61 million in sales (USD).

Envoy Textile Limited (ETL) was awarded LEED platinum certified company by USGBC. ETL is the first to score LEED platinum among all the Denim Mills in the world. LEED certification means healthier, more productive place, reducing stress on the environment and energy. The industry is the area of about 50 acres, 2200 hundreds of labor and total investment of 1400 thousand crore taka, extra 25 crore investments has been made to make it environment friendly. One of the biggest challenges for a textile industry to be a green industry is the water treatment. They have ETP, substation, dormitory for workers, multi-purpose tanning center, and lake for reserving rain water. The authority provides two meals against 30 taka only, free tiffin every after 4 hours, 24 hours medical facilities etc. The products of ETL are being exported around 10 countries in the world and directly working with 14 global brands like GAP, Walmart and H&M etc.

Bay Creations Limited

Bay Creations Limited, a well-known manufacturing and exporting knitting garments is situated at Kornogop, Borpa, Narayanganj. The organization is committed to continue sustainable green concept on its factory area. It has achieved USGBC certified LEED Gold category certification. Their motivation towards a green certification started from the awareness that, they need to contribute for a better future for their future generation.

Bay Creations achieves remarkable benchmarks in terms of LEED credits. It has achieved 36% improvement in energy and atmosphere on baseline building performance rating. It has also improved the quality view of 90% occupied working space. The green building project of the Bay Creation Limited was a new construction project. The green building concept has reduced 100% water consumption for landscape watering, 40% baseline indoor water consumption and 50% wastage water generation.

Bay Creation has used 10% recycled contents, 20% regionally extracted, recovered or manufactured materials for building construction. The workers of the company are highly satisfied with the activities of management. Particularly they have got huge appreciation from the employees because of availability of chillers which keep the temperature low in their workplace (Bhattacharja, 2020).

Nasa Hitech Style Ltd.

Nasa Hitech Style Ltd. is Located at Gazipur, Dhaka, Bangladesh. This organization started its journey in July 2018 with the intention of being certified by USGBC and finally it has achieved LEED Gold Certificate in 2019. Nasa Hitech Style Ltd. Has reduced energy consumption on the baseline performance rating by 26%. This green factory has reduced 40% of its water consumption for indoor water uses and 50% wastage water generation by fixing the water efficient fixtures. The green industrialization process of this company has increased the cost from 18% to 20% by means of new building construction, fabrication and LEED registration. In addition, some employees are fully employed for green project operation and maintenance.

As per the statement of the factory management, after the implementation of green project, the efficiency of machine in terms of power consumption has increased significantly. Moreover, they have installed low e-glass which has increased the availability of more daylight, and decreased the cooling load as well. In this green factory 75% occupied workplace has access of day lighting. Initially, it was not easy to cope up with green mechanism, but their confidence helps them to continue the green project successfully (Bhattacharja, 2020).

f. Benefits of Green Industry**Minimizing Energy Related Cost**

For a manufacturing unit energy and water cost are the prime concerns. Green building concept can reduce these expenses. Quicker and short term cost reductions may often fail to bring long term benefits. Unlike it this improvement is considered as annual saving.

If the levels of lighting can be adjusted with the production schedule, and energy-efficient lights can be used, it will help a lot reduce your long-term electrical bills. Constant supervision of equipment will also prove helpful.

For instance, if there is a leakage in the fuel supplying pipe, it means both wastage of energy and raise expenditure. The energy efficient equipment, machinery, solar and wind energy will significantly reduce monthly utility bills. Again a good amount can be saved in the stationary costs if the recycling and going paperless strategies are followed.

Attracting New Customers and Increasing Sales

To increase sales by being more attractive to the new customers, a company gets much benefitted from green and sustainable policy because nowadays consumers are more aware of the environment issues. So if a company adopts green policy, definitely it will increase its reputation. If their initiatives to be green are highlighted to people, it will help the company attract the customers. As a result, the sales will be increased. Moreover, for any government contract, the green manufacturing companies get priority.

Tax Incentives

Bangladesh often offers a verity of tax credits and rebates for those manufacturers who take initiatives for more sustainable improvements in their production. Incentives may be available to these manufacturers.

Increase of Moral and Innovations of Workforce

The sustainable improvement is a collaborative effort. To find out and apply green and sustainable development if the owner and the employees put their hands together, it develops a nice culture of team work and regular development. When the workers are motivated, they work harder and take pride in their company. They start believing that the development of their company stands for the development of their lot.

Societal Impact

A good initiative can make a real difference besides benefitting one's company. Just applying green building strategies, you will make a smaller step in the word. This smaller step will result in reducing the large number of toxins released into environment as a whole. Finally, and more importantly our next generations will get a healthier environment to live in.

V. RECOMMENDATIONS

- Government should make huge publicity and motivational seminars for increasing awareness among the industrialists to go greening.
- The benefits of greening of industries should be highlighted in the mass media.
- Government should declare tax holiday for green industrial establishment and reduce import duty from raw materials and machineries.
- Subsidies should be provided to the entrepreneurs who transform their transitional industry to green industry.
- Financial institution can declare special loan policy for green industrialization.
- BGMEA can play an important role to motivate its members to go green.
- Government can help in branding of the products of green industries in overseas markets.
- After all a sustainable policy is required for the solid development of green industries in Bangladesh.

VI. CONCLUSION

In the field of industrial development, the readymade garments sector plays a vital role in Bangladesh. This sector also contributes largely to the economy of Bangladesh. The main aim of this study was to show the present scenario of the RMG industries in Bangladesh particularly to identify the succeeding factors of green revolution, to highlight the benefits of green garments industry and recommend some suggestions to convert the traditional industries to green industries and to promote a healthy industrial environment in Bangladesh.

This study has exposed that sustainable site, rain water harvesting, reducing ozone depletion and good working environment are the key factors behind go green. This study also discovers that green industrialization ensures minimum energy related cost, attracts customers, increase sales, gets tax incentive and ensures moral of workforce. Finally, some recommendations have been provided for transforming traditional industry to green industry. In brief, the growth of green garments factories in the coming days mostly depends on the united efforts of all the stakeholders and sufficient support of the government.

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