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# An Empirical Scrutiny of Environmental Accounting Reporting (EAR) and Vision 2021: A way of Environmental Protection

# Soiloor Nandini Arunima

#### Abstract:

In the current study entitling "An Empirical Scrutiny of Environmental Accounting Reporting (EAR) and Vision 2021: A way of Environmental Protection", I critically examine the practices of environmental accounting in listed companies in Bangladesh and how it can be linked with the near goal of Bangladesh "Vision 2021" which is the election manifesto of current government. Vision 2021 has eight goals and our environmental issues are given priority in that case. As EAR is voluntary reporting, stakeholder theory and legitimacy theory can be related. Content analysis is used as methodology and taking 52 listed companies of Dhaka Stock Exchange randomly from 10 main industries and world bank report in order to know prevailing environmental situation in Bangladesh. The study has found there is a severe environmental degradation over years and listed companies are not aware of EAR in Bangladesh. Lastly, the paper suggests some recommendation to focus on EAR in order to achieve Vision 2021.



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**Keywords**: Environmental accounting reporting, Vision 2021, Listed companies, Dhaka Stock Exchange.

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#### Introduction

There are several researches where separately environmental accounting issues has been investigated and there reporting practices in the companies. But there is no finding to relate these issues with our upcoming goals "Vision 2021". Within 8 goals of this vision, goal number seven is about "to be environmentally sustainable" and there are some other goals which is indirectly related with environmental issues which can be dealt by environmental accounting. For example, it is mentioned in 7th five-year planning, within 2020, the country is trying to achieve GDP growth rate 7.4% per year. And if we don't include environmental cost in this case, it will be given misleading information and environmental degradation will be happened which has been already noticed. Our river "Buriganga" is clinically dead and we have widespread arsenic pollution in underground water. Air pollution has been increased due to increasing carbon emission. Bangladesh has been concerning about huge cost for its economic development but it's high time to think environment as an inevitable elements of economic achievements. It is seen that environmental reporting is voluntary in our country. It is a matter of concerns that Companies Act-1994, SEC rules-1987, Income Tax Ordinance-1984 of Bangladesh do not make it compulsory to prepare environmental reporting. As a result, some companies are preparing report just for getting benefit out of them but in reality this report may not make any sense and will not work.

So, if the companies do work with Environmental Accounting Reporting (EAR) that will help them to be careful of environmental issues and uphold green images and ultimately it will be beneficial to minimize environmental degradation going forward to achieve the "Vision". There are five objectives for writing this paper (i) to relate environmental accounting with "Vision 2021", (ii) to check the prevailing environmental atmosphere in Bangladesh, (iii) to examine EAR done by the sample listed companies, (iv) to describe environmental performance and the quality of reports. and (v) to recommend the improvement reporting practices of environmental accounting through which "Vision 2021" can be achieved successfully.

# **Background Information**

Basic Concept of Environmental Accounting: Environmental Accounting is a field that identifies resource use, measures and communicates cost of a company's or national economic impact on the environment (Deegan, 2013b). Cost includes cleaning up, environmental fines, penalties and taxes, purchase of pollution prevention technologies, waste management costs and cost of damaging the natural resources by economic activities. Environmental accounting emerged in 1970 for increasing the public awareness and concerns of environmental well-being. The development of environmental accounting has been established through four stages.

1970-1980	The beginning of first research of environmental accounting as a descriptive character.		
1981-1994	Find the way of accounting disclosure and became a prominent research topic.		
1995-2001	It was the maturation stage of environmental accounting. There were so many		
1775 2001	establishments in this period and environmental audit is one of them. It was discusse		
	both theoretically and practically in developed countries. This period named		
	"cornerstone" of environmental accounting as to gain interest due to the implementation		
	of standards as a part of audit verification.		
2002-till date	EAR, environmental audit and environmental management accounting are new sub-fields		
	in this area.		

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And again, in monetary aspects, monetary data includes material costs of product, waste emission cost, prevention cost, R&D cost whereas physical data consists of information about input and output. Environmental accounting has three distinct applications: (i) national income accounting, which examine macroeconomic measures in a national economic context. (ii) financial accounting, which includes companies' estimation and reporting of environmental concerns to the public. It is readily available to the public through annual report or sustainability report, and (iii) management accounting where environmental data is used for decision making. It is confidential and internal.

**Overview of Vision 2021:** Bangladesh will celebrate 50 years of its independence in 2021. The objective of preparing "Vision 2021" is to provide a framework of nation's hopes and aspiration for economically inclusive and politically accountable citizens. The Vision proposes eight identified goals by 2021 through the implementation of medium and long term initiatives. The following 8 goals are:

- 1. To become participatory democracy
- 3. To become poverty free middle income country.
- 5. To develop skilled and creative human resources.
- 7. To be environmentally sustainable.

- 2. To have an efficient, accountable, transparent and decentralized systems of governance.
- 4. To have a nation of healthy citizens.
- 6. To become a globally integrated that is becoming link with regional economic and also commercial hub.
- 8. To be a more inclusive and equitable society.

Source: Bangladesh Vision 2021, prepared by Nagorik Committee 2006.

According to the topic of research, this paper is focusing on 3 goals of vision that are related with environmental accounting.

- **1. Goal no. 3:** to become poverty free middle income country.
- **2. Goal no. 4:** to have a nation of healthy citizens.
- **3. Goal no. 7:** to be environmentally sustainable.

### To Become Poverty-Free Middle Income Country

IMF published on their regular overview report of Bangladesh economy (*Bangladesh 2018 Article IV Consultation*, IMF Country Report No. 18/158, June 2018) writing that Bangladesh economy is performing well and it's GDP growth rate is now more than 6% over last decades and it is trying to reduce poverty. So, according to World Bank classification, Bangladesh is turning low income to lower middle income. To accomplish goal 3, greater productivity in agriculture, accelerated growth in service and industries, diversified export base, sound financial institutions, well consumer market is needed to be ensured to increase GDP per capita and GDP growth. To become an upper middle income country, Bangladesh need to focus on GDP but different pollution has been increasing day by day which is the obstacle to improve socio-economic progress.

# To Have a Nation of Healthy Citizens

Beside healthcare facilities, the adaptation and maintenance of healthy lifestyle and other well-being are basically depend on the nutrition people have and environment where people live in. Due to the rapid industrialization and lack of their accountability in environmental degradation, this goal is becoming a challenge.

To Be Environmentally Sustainable

This goal is closely and directly associated with the environmental accounting. As the purpose of this goal is to reduce air, sound, soil, water pollution and ensure soil fertility, waste management, protect forest, cost-effective alternative sources of energy and so on, the commercial institutions are mainly responsible in this case. In this regard, EAR can be one of the most focusing area by which the organizations will aware of not to do any harmful environmental activities as they need to report environmental costs. EAR makes the organizations accountable to the regulatory institutions and also to the society and thus environmental damages can be reduced and ensure it sustainable. So, it can be clearly stated that, Environmental accounting system and reporting of costs will help to implement these three goals.

# **Relevant Literature**

In 1997, S. EI Serafy focused on environmental changes. He argued that the national accounts depend on economy and only green accounting can ensure income and ecological sustainability. (EI Serafy, 1997). However, T. Aronsson and K. G. Lofgren proposed the growth of theoretical approach to social accounting. The purpose of this paper is to reconcile the willingness to pay information on the basis of that emission taxes can be designed. This emission taxes can be used to measure the value of the depletion of environmental capital in the national accounts (Aronsson & Lofgren, 1999). Moreover, Christmann & Fussel in 2000 wrote a paper about environmental accounting and environmental management accounting. Environmental accounting emerged from financial accounting whereas environmental management accounting emerged form management accounting (Christmann & Fussel, 2000). Nevertheless, a study naming "Environmental Reporting in Developing Countries: Empirical Evidence from Bangladesh" showed that 30% of annual reports having limited EAR disclosures (Belal, 2000). However, J. Dillard, D. Brown, et al. in 2005 highlighted a framework for environmental management and accounting systems taken into account alternative environmental perspectives. (Dillard, Brown & Marshall, 2005). Again, IFAC in 2005 published a draft that was accepted by many academicians and practitioner bodies. This draft was about the acceptable reference material and methodologies of wastage accounting, material flow cost accounting, environmental performance indicators etc. (IFAC,2000). Additionally, Rahman and Mutakin in 2005 showed by his paper naming "Corporate Environmental Reporting Practices in Bangladesh - A Study of Selected Companies" the disclosure policies of Bangladeshi companies. In their study, it was found the disclosure policy was poor and the quantification was also miserable they found some problems respect to the disclosure policies and also given some recommendation (Rahman & Mutakin, 2005). Yet, a study done by Shil and Igbal in 2005 entitled "Environmental Disclosure- A Bangladesh perspective. Here, they showed the disclosure policies were initial stages in Bangladesh (Shil & Igbal, 2005). Again, "Environmental Accounting and Reporting in Fossil Fuel Sector: A study on Bangladesh Oil, gas and mineral Corporation was conducted by Bose mentioned that Petrobangla takes many initiatives to provide environmental friendly energy in Bangladesh (Bose, 2006).

Before, Ball did a case study on Canadian City Council and said that the utility of a social movement in organizations perspective proved that environmental accounting is used by the employee as a result of organizational response to environmental issues (Ball, 2007). However, M. J. Jones in 2010 proposed a multi-layered theoretical model and explained environmental accounting and reporting, environmental dangers, corporate responsibility, new relationship between industry and environment and disclose and impact of stakeholders.

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Through the acceptance of this model, Jones figured out some implications. First, the managers and accountants must be prudent to address environmental threats. Second, the traditional accounting systems has a narrow area only depending on numbers which is failure to capture environmental consequences. Third, it is need to explore monetary and nonmonetary valuation systems due to innovation and experimentations. Finally, the organizations should disclose environmental performance to the stakeholders (Jones, 2010). Moreover, Islam and Rahman in 2011, proposed a paper entitled "Bangladesh Financial Reporting Standard and Environmental Accounting: A case Study of Manufacturing Companies in Bangladesh". This paper randomly was collected 65 listed companies in Bangladesh and found that EAR report and Audit report are unclear and there is rarely contained quantitative data based on the standard based on EAR. They also gave a guideline to record both environmental assets and liabilities (Islam & Rahman, 2011). Nevertheless, J. Andrew and C. Cortese in 2011 scrutinized the dominant environmental disclosures influencing on carbon disclosure regulation. These disclosures remain voluntary. So, this paper was tried to construct a self-regulated carbon disclosure practices that can help in climate related decision making (Andrew & Cortese, 2011). Most importantly, F.M. Khalid et al. in 2012 showed that there is a pressure of the implementation of Environmental Management Accounting and the organizations is not willingly report. They just prepare their report to reduce cost and to be legitimate to society, regulatory parties, customers and other stakeholders (khalid, et al., 2012). Additionally, Afzal Ahmed in 2012, wrote an article about "Environmental Accounting & Reporting Practices: Significance and Issues: A Case from Bangladeshi Companies". He took both primary and secondary data. Primary data was collected from 40 chief accountants about their perception of EAR reporting and problems associated with it. Secondary data was collected from annual reports of 40 companies and found their EAR reporting is very poor (Ahemd, 2012). On the other hand, F.Ascui and H. Lovell in 2012 investigated that the acceptancy in carbon accounting has been defined by different communities and accountants are the relevant authority in the field of financial reporting (Ascui & Lovell, 2012). Moreover, in 2013, Deegan, C. argued that the organizations should not only prepare financial report but also prepare social and environmental report. Like other researchers, he dismissed the traditional accounting systems and suggested to follow market based mechanism. He recommended to teach this for enlightening social responsibility to the mind of students. Yet again, he tried to develop the traditional monetary reports framework and EAR worked within it caused by market. The paper concluded that the role of accounting and business educators is affected by the personal social responsibility. (Deegan, 2013). Besides, R. Gray in 2013 investigated mainstream research of financial accounting and found that financial accounting is only based on economic ground not internally linked with nature. But green accounting can deal accounting with nature (Gray, 2013). Yet, P. Bartelmus in 1992 interpreted accountability of environmental impact related with the sustainable development. Again in 2013, the author discussed the method of green accounting at the national level and analysied the role of energy in accounting and sustainability analysis (Bartelmus, 2013). Conversely, K. L. Christ and R. L. Burritt in 2013 pointed to the EMA in organizational context used by Australian organizations. Through webbased survey, it was found that the usage of EMA will be associated with environmental strategy, organizational size and environmentally-sensitive industries in now or future. The study also drew a conclusion that the contingency based research is the potential for further understanding of the EMA development (Christ & Burritt, 2013). On the other hand, B. Edens and L. Hein in 2013 pointed to four key methodological challenges in ecosystem accounting. Those were, the definition of the ecosystem services in the context of accounting, allocation to

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the institutional sectors, the treatment of the degradation and rehabilitation and valuing ecosystem services. The paper also suggested an approach for recording degradation and monetary valuation in the context of accounting (Edens & Hein).

However, F. Asdrubali, A. Presciutti, et al. in 2013 wrote a paper mentioning the local action against emiision of greenhouse gases (GHG) pointing out that "think globally, act locally". The paper recommended the authority to have the source of GHG emission and according to that take the decision and legal steps (Asdrubali, presciutti & Scrucca, 2013). Yet, "Environmental Accounting and Sustainable Development: An Empirical Review" was published by Hossain, Halim et. al in 2016. It was the descriptive research where it gives background information of Environmental accounting and sustainable development and how environmental accounting emerged and related with sustainable development (Hossain et. al, 2016). However, Masud et. al in 2017 wrote a research paper entitled "Analysis of Environmental Accounting and Reporting Practices of Listed Banking Companies in Bangladesh". Here, the research was done for banking sector EAR reporting. It was recommended that the national and international professional bodies of accounting to propose a separate conceptual framework for EAR.

# Theoretical Background

Environmental Accounting Reporting (EAR) can be related with two theories: Stakeholder theory and legitimacy theory. As per stakeholder theory, if powerful stakeholders demand for EAR disclosure, the organization must do report. EAR disclosure ensures the action of organization such as, pollution prevention, environmental management system, effective and efficient utilization of natural resources etc. to its stakeholders. Legitimacy theory means that the organization is to be legitimate within the society so that the organizations have to follow the norms, belief and values within the society. EAR is the best tool to communicate with the society that they are bound to the society. If the industrial leader does EAR, or if there is a pressure from regulators, the organization follow EAR. Prior research found that, EAR disclosure is positive but sometimes it gives some false news to the society to be legitimate.

# Methodology

This paper is based on content analysis and evidence collected from annual report which are listed companies of Dhaka Stock Exchange and world bank report. For this research purpose, 10 main industrial sectors have been taken. The total number of companies in these 10 industries are 174. So, the sample size is 52 taking 30% of total population. And these 52 companies have been selected proportionately from 10 industries and companies from each industry have been picked up randomly. And the data collected from Annual Report- 2017-18. So, Taking the sample as below for checking EAR:

Sector	Total	
Bank	9	
Cement	2	
Ceramic sector	2	
Food & Allied	5	
Fuel & Power	6	
Jute	1	
Paper & printing	1	
Pharmaceuticals & chemicals	9	
Tannery	4	
Textile	13	
Total	52	

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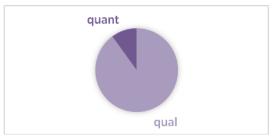
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For this research purpose, the World Bank data has been taken to show the situation of Co2 emissions, air pollution, % of safe drinking water, and % of forest according to land area.

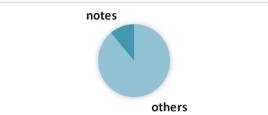
# **Findings and Analysis**

**EAR Disclosure:** As it is known that there is no specific standard for environmental accounting, conceptual framework, BFRS 1 and BFRS 6 can be recommended as a guideline.

**i. Banking Sector:** Among 30 banks, 30% of population or 9 banks have been taken from listed commercial banks and Islamic bank. It has been found that most of the reporting is qualitative and only numaretive value is given in some of the annual reports.

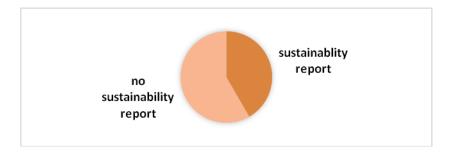


It has been seen that in chairman report, director report, ethics, value and objectives, mostly in CSR and sustainability report, the company has mentioned about their environmental activities. Most of the banks are following Bangladesh Bank rules for "green banking", "green IT" and "environmental risk management". In the case of qualitative information, environmental program and the cost of less carbon emission is noticeable in banking industry which is very insignificant number.



There is no reporting in financial statement. Among banks, only "AB Bank" reported in their notes separating headings "Environment Risk management".

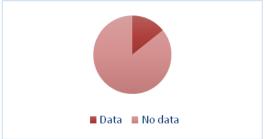
Some of the banks also prepared sustainability report. The proportion has been given:



In summary, banking sector prepares their annual report giving a few information about environment which is not workable as EAR at all.

**ii. Cement Industry:** Poor reporting quality in cement sector. Qualitative information is given in sustainability report and CSR about tree plantation and in house green environment etc.

- iii. **Ceramics Sectors:** No information of environment in notes and financial statements. There is reporting in other segment like chairman and director report, CSR etc. One of them demanded that they ensure green production and green environment. Corporate governance in another part where companies like to report their qualitative information about environmental risk. In summary, Cement and ceramics industries do not report well enough.
- iv. Food and Allied: Among the sample of food & allied sector, BATBC is mentionable. It provided the information of waste cycling, C02 emission. It prepared sustainability report as well. Most importantly, it mentioned "Vision 2021" linked with environmental protection. So, BATBC enriched its annual report with rich qualitative information. Golden Harvest Agro Industries Ltd gave some parameter in their annual report under the heading of environmental sustainability. It reported of green philosophy and green production. And other companies in this sector reported ordinarily saying they have no impact on environment. There is no single company to disclose EAR.
- Jute and Paper & Printing: There is no available information of jute sector. And v. Basundhara Paper mills has some information of environmental protection and awareness.
- vi. Fuel & Power: Among the sample, only Summit Power Ltd has information and placed in notes. In note it reported in **environmental consultancy** in "Advance, loan & deposit" and environmental compliance at "Cost of sales". In a word, their EAR disclosure is better than any other company in any sector.
  - But, it is a matter of regret, no other company reported about EAR even in any information of environment. On the basis of sample size, the graph is given below,



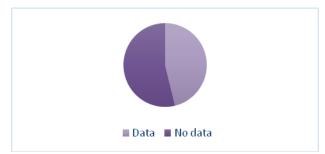
- vii. **Tannery Industry:** It is a matter of surprised that no company has been found to report about environment even in some renowned companies although these sector makes the environment more polluted.
- **Pharmaceuticals Sector:** It is one of the largest sector in Bangladesh but the companies viii. have some information in CSR, directors & chairman report and sustainability report which is not so good enough as reporting.



**Textile Sector:** Delta Spinners Ltd is one of the sample companies which reported in ix. notes environmental certificate under the head of factory overhead. And other companies reported some qualitative information of environment.

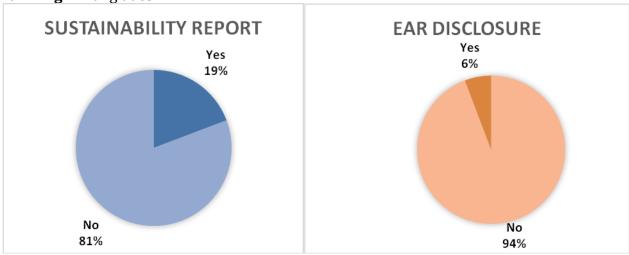
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In a nutshell, according to environmental accounting, the environmental costs are recorded only 3 companies among 52 companies which is 6% only. And according to GRI compliance, 19% companies prepared sustainability report of total sample.

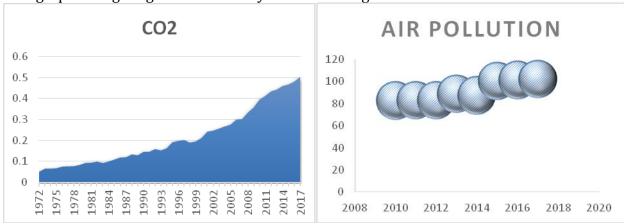
So, the prevailing environmental accounting reporting in listed companies is **very poor and alarming** in Bangladesh.



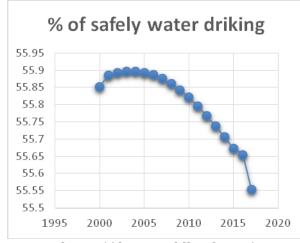
# **Environmental Issues in Bangladesh:**

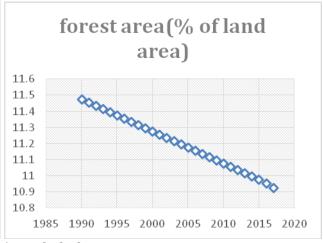
From world bank data,

• it has been found that Co2 emission and air pollution have been increased gradually. The graphs are giving below for easily understanding.



• It is alarming that safe drinking water and forest land area have been decreased. As a result, the pollution all over country is being increased day by day.





Source: https://data.worldbank.org/country/Bangladesh

Bangladesh daily newspaper "Prothom Alo" published a news recently from which some of the highlighting points are giving below:

(i)Dhaka city is the 2<sup>nd</sup> polluted city in the world. (ii) In case of plastic pollution, Bangladesh is 10<sup>th</sup> in position. (iii) Bangladesh is in the top of decreasing the agricultural land and forest in the world. (iv) Most highlighting news is, Bangladesh is 179<sup>th</sup> among 180<sup>th</sup> for the preservation of environment and forest. and (v) In 2015, 28% of death was occurred due to the disease linked with environment. (Prothom Alo; 11<sup>th</sup> february,2019)

### **Conclusion and Recommendations**

Manufacturing and service industries are primarily responsible for environmental pollution. As Bangladesh has only one year to achieve the goals of "Vision 2021" and environmental degradation is one of the biggest challenge to achieve that goals, it is high time to ensure the reporting practice within organization for less pollution. Here are some recommendations: First, Studies is recommending environmental accounting and reporting. Second, the company should maintain environmental assets (machinery to produce less carbon etc), environmental liabilities and provisions and environmental costs and communicate through annual report. Third, EAR must be ensured mandatory to all companies and there should be strict law and the relevant acts of environment which should be followed by organizations. Fourth, the regulatory authority should be aware of some specific industries like tannery, chemicals and textile sector which occurs significant pollution. and Lastly but not the least, highly ethical standard should be prevailed in all stakeholders (companies, regulatory bodies) to ensure environmental sustainability.

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# **Appendix**

# List of Sample Listed Companies for the Study

#### **Banking Sector:**

- 1. Dutch-Bangla Bank Ltd.
- 2. Islami Bank Bangladesh Limited.
- 3. United Commercial Bank Ltd.
- 4. BRAC Bank Ltd.
- 5. AB Bank Limited.
- 6. Bank Asia Ltd.
- 7. First Security Islami Bank Limited.
- 8. Mutual Trust Bank Ltd.
- 9. One Bank Limited.

#### Cement Industry:

- 10. Confidence Cement Ltd.
- 11. Premier Cement Mills Limited.

#### Ceremic Sector:

- 12. RAK Ceramics (Bangladesh) Limited.
- 13. Shinepukur Ceramics Limited.

#### Food & Allied Sector:

- 14. Agricultural Marketing Company Ltd. (Pran).
- 15. Apex Foods Limited.
- 16. British American Tobacco bangladesh Company Limited.
- 17. Olympic Industries Ltd.
- 18. Golden Harvest Agro Industries Ltd.

#### Jute Sector:

19. Northern Jute Manufacturing Co. Ltd.

#### Paper & Printing:

20. Bashundhara Paper Mill Limited.

#### Fuel & Power:

- 21. Dhaka Electric Supply Company Ltd.
- 22. Linde Bangladesh Limited.
- 23. Jamuna Oil Company Limited.
- 24. Padma Oil Co. Ltd.
- 25. Summit Power Limited.
- 26. Meghna Petroleum Limited.

#### **Tannery Sector:**

- 27. Apex Footwear Limited.
- 28. Apex Tannery Limited.
- 29. Legacy Footwear Ltd.
- 30. Bata Shoe Company (Bangladesh) Limited.

#### Pharmaceuticals & Chemicals:

- 31. ACI Limited.
- 32. The ACME Laboratories Limited.
- 33. Beximco Pharmaceuticals Ltd.
- 34. Orion Pharma Ltd.
- 35. Square Pharmaceuticals Ltd.
- 36. Beximco Synthetics Ltd.
- 37. Far Chemical Industries Limited.
- 38. Renata Ltd.
- 39. Marico Bangladesh Limited.

#### **Textile Sector:**

- 40. Aman Cotton Fibrous Limited.
- 41. Alif Manufacturing Company Ltd.
- 42. Apex Spinning & Knitting Mills Limited.
- 43. Delta Spinners Ltd.
- 44. Desh Garmants Ltd.
- 45. Envoy Textiles Limited.
- 46. Familytex (BD) Limited.
- 47. Hamid Fabrics Limited.
- 48. Pacific Denims Limited.49. Maksons Spinning Mills Limited
- 50. Rahim Textile Mills Ltd.
- 51. Simtex Industries Limited.
- 52. Square Textile Ltd.

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