

CHAPTER V

Findings, SuggeStions and ConCl usion

This chapter is meant to conclude the summary of findings obtained on the basis of this entire research work conducted on Environmental Accounting and Reporting practices of the selected industries of Assam and also gives suggestions to make Environmental Accounting and Reporting practices a significant area for future research. The conclusions drawn from the various chapters and on the basis of these inferences, it gives various measures to improve the practices of Environmental Accounting and Reporting in the companies of Assam. Future areas of research are also a part of this chapter.

5.1 Summary of findings of the Study

The main findings drawn on the basis of objectives of the study and analysis of data are mentioned below:

Findings relating to objective 1: To examine the Environmental Policy and Performance of the selected industries of Assam.

1. It has been observed that out of 25 sample industrial units of Assam, 15 (60%) units have adopted Corporate Environmental Policy (CEP). Disclosure of CEP in Annual Reports of the company is almost missing. CEP is disclosed by the units in different ways. Some of these include: companies' website, signboards in an attractive and innovative way by displaying it in the entrance gate of the industrial units, company's policy statements and other booklets. (These are shown in **Appendix IV**)
2. It was found that 66.67% companies mentioned about Safety, Health and Environment and Environment legislation and regulation in their CEPs. Regarding Environmental conservation/ Natural Resource conservation,

64.29% companies have mentioned in their CEPs. Also, Training and environmental awareness in CEP was 53.33%. Waste/effluent management, eco- awareness and eco-friendly products were also among the most often included items of CEP of the sample units.

3. From the analysis of Corporate Environmental Policy's items of the 15 sample industrial units', it was found that mean and standard deviation are 4 and 2.80 and the reporting score ranged from 1 to 10 points, indicating a medium variation in the disclosure level of corporate environmental information in Assam.
4. On the basis of field survey, environmental performance of 13 selected industrial units of Assam was verified. It has been observed that 62% of the companies in Assam disclosed regarding discharge of wastes. These industrial units mentioned that wastes were disposed either by dumping or by discharging in the river. Recycling was done by only one industry (15%). Other industries were not recycling their wastes, but only disposed it off.
5. Regarding most pollutant wastes products disclosed by the sample industrial units, it was found that lignin by paper industry, oily sludge by oil refinery, oil spillage and drilling waste by petroleum and natural gas industry, liquid effluent by fertilizer industry, solid metallic wastes by petrochemical industry, mine effluent water by coal industry, shaw dust and coal dust by plywood industry and coal ash by tea industry. Out of 13 sample units, only one industrial unit has not disclosed its wastes products.
6. In response to the question against complaints received from local community regarding damages caused to the environment due to industries'

operational activities and preventive measures they have taken. Out of 13 sample industrial units, 84.62% units responded that they have not received any complaints. Whereas, only one unit responded that it has received local complaints and have taken preventive measures by removing the damages, paid compensation and inducted corrective measures.

7. Regarding Environmental Management System in terms of ISO 14001 and Clean Development Mechanism, it was found that 69.23% units have adopted EMS in terms of ISO 14001 and 38.46% units developed Clean Development Mechanism (CDM) while 61.54% units have not yet adopted till now which indicates less concern about pollution abatement. Also regarding Waste Management Plan, it was observed that implementing WMP by the companies was very encouraging. 84.62% replied that they have adopted WMP.
8. In response to Question regarding submission of Environmental Statement to the State Pollution Control Board (SPCB) regularly, all the companies mentioned that they submit fees & E. S. regularly. In replying this question, all the companies answered that they have not been penalised or fined by SPCB for violation of code of conduct during all the five years, i.e., from 2007-08 to 2011-12. On question of compliance with Environmental laws/ Regulations and section 217(1) (e) of the Companies Act, 1956, it was found that compliance was 100%. This shows that if companies publish any vital information relating to the level of environmental management which is required by law, compliance of the same becomes automatic.

9. It was observed that adoption of green technology by the companies was not very encouraging. It was found that only 46.15% have adopted green technology and only 23.08% make capital expenditure for green technology.
10. Regarding EAR awareness, 69.23% companies mentioned accounting policies about measurement and reporting of environment related costs, benefits etc. It was also found that only 46.15% mentioned against separate provisions or contingent liabilities for managing risks and Environmental Risk Reserve. In response to adoption of environmental audit by sample companies, it was found that 69.23% companies have adopted environmental audit.

Findings relating to objective 2: To analyse the nature of Environmental Accounting and Reporting of the selected industries of Assam.

11. It has been observed that most of the companies have disclosed environmental information in Annexure to Directors' Report since it is a statutorily required which includes conservation of energy, technology up gradation and foreign exchange earnings and outgo under sec 217(2) A of the companies Act, 1956, read with the companies (Disclosure of particulars in the report of Board of Directors) Rules, 1998.
12. The overall findings from five years showed that environmental information disclosed in Directors' Report was 49.56%, apart from Annexure to Directors' Report which was 87.61%. Moreover, Annexure to Directors' Report is mandatory for most of the companies. The next disclosing item of environmental information is Management Discussion and Analysis Report which was 17.70%. In Notes to Statement of Profit & Loss Account/ financial

statements, disclosures on environmental information have found 15.04% in financial forms. Environmental disclosures of environmental information in Chairman's Statement were 9.73% which was less as compared to other type of disclosures.

13. The present study on place of Environmental Accounting and Reporting in Annual Report of the sample companies in industries revealed that the companies are reporting their environmental information's under different components of Annual Report. The place of reporting also varied from one year to another year. In most cases, the companies are not maintaining this place of reporting through any regulation but still they maintain a good uniformity within the different companies of same industry.
14. Environmental Accounting and Reporting is mainly in descriptive form disclosed by 67% companies of Assam. 18% companies have disclosed in financial form. Also, 3% companies have seen zero disclosures in quantitative form in all the five years. On the whole, descriptive and financial were the widely used forms of environmental disclosure. Moreover, it is found that graphical presentation regarding EI was almost absent in the Annual Reports.

Findings relating to objective 3: To assess the extent of Environmental Accounting and Reporting of the selected industries of Assam.

15. It has been observed that out of 25 sample companies under 10 industry groups in Assam, 21 (84%) companies disclosed EI. Only 4 (16%) sample companies have not disclosed any information on environment. Almost all the sample companies in industries disclosed some information towards environmental protection. Only plywood (orange category) industry did not

disclose any type of information. It is worth to mention that all red category industries (cement, fertilizer, oil refinery, petrochemicals, pulp and paper, power, coal and petroleum and natural gas) disclosed Environmental Information (EI). Also, the orange category industry which is moderately polluting like tea has disclosed EI.

16. The study on extent of Environmental Accounting and Reporting practices showed that the disclosure levels of most of the sample companies are not satisfactory. 86% of the companies disclosed their environmental information within the range of 0-10 sentences. The same observation was also recorded in case of number of words used by the company for disclosing their environmental information. 74% sample companies used less than 100 words.
17. The Study showed that the highest variation is found in case of words (count) which varied from minimum 0 to maximum 555 in 2007-08, 705 in 2008-09, 749 in 2009-10, 1009 in 2010-11 and 819 in 2011-12. The highest variation is found in case of sentences (count) which varied from minimum 0 to maximum 21 in 2007-08, 28 in 2008-09, 33 in 2009-10, 30 in 2010-11 and 47 in 2011-12.
18. It has been observed that during 2007-08 and 2008-09, “energy conservation” and “Pollution control” (86.36 % and 40.91% of the companies disclosed each of these items) have been the favourite environmental disclosure items for showcasing their environmental performance by the sample companies in Assam. In 2009-10 and 2010-11, it was found that 82.61% companies disclosed about Energy Conservation in

their Annual reports. 39.13% companies found disclosure of Pollution Control in 2009-10 which has increased to 47.83% in 2010-11. During the year 2011-12, Energy Conservation (86.96%) and Pollution Control (52.17%) have increased. This showed an increased level of awareness among the companies regarding environmental protection.

19. It has been observed that overall disclosure during five years on environmental information by the sample companies in respect to 'Pollution Control' was 44.25% apart from Energy Conservation (84.07%) which is statutory disclosed for most of the companies, the other items of disclosure were ISO 14001 (36.28%), CSR (34.51%), Safety, Health and Environment and Plantation and Afforestation (28.32%).
20. Apart from energy conservation disclosed by most of the sample companies in industries, other items of environmental disclosures on pollution control was disclosed 100% by Fertilizer and Petrochemicals industries which were more as compared to other industries indicating positive awareness towards environmental protection. Other industries like Power and Plywood did not disclose any information about Pollution Control. The next item is Environmental Awards which were received more by Oil Refinery. The entire sample companies under Fertilizer and Oil Refinery have adopted ISO 14001. 80% of the plantation and afforestation was done by Coal industry which was very encouraging. The other items of environmental disclosure are Safety, Health and Environment, Water Conservation, Environment Audit, Clean Development Mechanism, Green Belt Development, Environmental Compliance, Air Monitoring, Solid Waste Management,

training and Environmental Awareness, Environmental Protection, Corporate Social Responsibility, Environmental Protection and Biodiversity Disclosed by the sample companies mostly.

21. It has been observed that the high performing companies in industries are BVCL, BVFCL, IOCL, BRPL, NRL, CIL-NEC, OIL, ONGC, GAIL and HPCL. These companies have disclosed maximum items relating to environmental conservation and protection thereof.
22. Rank analysis was done to determine Industry wise performance. It is observed that out of selected polluting industries in Assam, Petroleum and Natural Gas industry has scored the highest based on average total scores of the industry and it occupies the first rank position for securing highest average total scores of 28. The second and the third rank positions have been occupied by industries J (Tea) and C (Oil Refinery) respectively. Cement (A) industry ranked fourth. The lowest rank position has been assigned to D (Petrochemicals) and F (Power) industry for securing the lowest average total scores of 2.00 and 1.40.
23. In this study, descriptive statistics have been analysed for all the variables, which were averaged over the five year period (2007-08 to 2011-12). The study found that Environmental Information disclosure has a mean value of 3.70 with SD of 2.75. The natural logarithm of total assets, which is taken as proxies for size, has a mean of 6.49 and standard deviation of 2.75. Profitability for the sample companies has a mean value of 0.08 and SD is 0.17. The debt-equity ratio has a mean value of 0.52 with a SD value of 0.60. The liquidity shows mean value of 1.45 and a standard deviation of 1.28.

The age of the company on average is 48% with a standard deviation of 0.50.

24. Correlation (Pearson) analysis has been done to determine that if there is a positive significant relationship between size of the company and the number of words and sentences used in disclosure of Environmental Accounting and Reporting. The correlation was found significant at 5% level, which indicates that as the size of the companies' increases; the more is the use of words and sentences used in disclosure of Environmental Accounting and Reporting.
25. There is also a positive significant relationship between profitability of the company with number of words and sentences used in disclosing Environmental Accounting and Reporting. The correlation is found significant at 5% levels, which indicates that as the profitability of the companies' increases; the more is the use of words and sentences used in disclosure of Environmental Accounting and Reporting.
26. Correlation (Pearson) test was analysed and found that there is a negative significant relationship between debt-equity of the company with number of words and sentences used in disclosing Environmental Accounting and Reporting. The correlation is found significant at 5% levels, which indicates that as the debt-equity of the companies' decreases; the more is the use of words and sentences used in disclosure of Environmental Accounting and Reporting.
27. It was also found that there is no significant relationship between liquidity and age of the company with number of words and sentences used in

disclosing Environmental Accounting and Reporting. The correlation is found insignificant at 5% levels.

28. The Findings of the Pearson correlation analysis implies that a very strong positive correlation exist between the size of firms and the level of corporate environmental disclosure among the selected industries in Assam; and it is also significant at 1% level. This result further indicates that the size of firm either in terms of market capitalization, number of employees, turnover or total asset base; plays a very significant role in the level of corporate environmental disclosure.
29. The results of multiple regression support Size in this study. The R Square under the model is 0.333, which indicates that the model is capable of explaining 33.3% of variability of the disclosure of environmental information in the sample of Indian companies in the study. The adjusted R-square indicates that 30.5% of variations in the dependent variable in the model used here are explained by the variations in the independent variables. Furthermore, the F-ratio indicates that the regression model significantly explains the variations in environmental disclosure of companies in Assam. The study documents the positive relationship between environmental disclosure and size of the company.
30. In the present study, the result shows that the regression has positive and significant correlation between company size and environmental disclosure. On the other hand, profitability has no influence towards disclosure of environmental information. However, the study indicated that debt-equity and liquidity has no obvious influence on the environmental disclosure.

There is an indication that companies with high profitability may not disclose more information. It seems that such companies perceive that there may not be value-added effects from disclosing environmental protection information. Investors may also not find this information very relevant for their investment portfolios. In addition, the debt-equity of the companies in Assam did not pass the test which may probably be due to the fact that creditors are not concerned about corporate environmental information.

5.2 Suggestions and Recommendations

Based on the findings of this study, following suggestions have been drawn:

1. Environmental Accounting and Reporting is considered as an effective tool for better Corporate Environment Management. Therefore, it should be made mandatory for all the industries particularly the highly polluting ones.
2. There is hardly any uniformity in Corporate Environmental Policy of the sample industrial units. They should adopt uniform reporting and disclosure standards of environmental issues for the purpose of control and measurement of environmental performance.
3. It is recommended that environmental friendly firms, who disclose sufficient environmental related information, may enjoy competitive advantage as well as reduce the environmental cost in long run.
4. Environmental performance should be disclosed in the Annual Reports of the companies for the interest of stakeholders.
5. Steps should be taken globally to introduce separate guidelines for Environmental Accounting and Reporting. Moreover, accounting bodies

should develop necessary accounting guidelines and standards for Environmental Accounting and Reporting.

6. There should be uniformity in the environmental disclosures practices disclosed by the companies in Assam.
7. Environmental expenditures should be shown regularly by the companies in their separate accounts for measuring and reporting environmental performance of individual companies.
8. The companies in Assam should incorporate all significant information relating to environment management in a separate section of the Annual Report. The corporate environmental information provided through these channels may serve the users at the initial stages.
9. Environmental performance indicators should be developed to render environmental data more understandable and comparable. The most common indicators link physical data on emission with figures like quantity of production, sales, value-added and transformation cost etc could be used by the corporate enterprises.
10. Accountants' role is of paramount importance as the assessor and presenter of information.
11. New researches and studies should be encouraged in developing Environmental Accounting and Reporting practices at all levels.

5.3 Scope for Future Research

Environmental Accounting and Reporting has emerged as a new domain for future research. It has gained importance in recent times due to the increasing

consciousness of the public towards the harmful effects of environment as a result of industrial activities which pollutes environment most. In this study, the scope of the study was limited to large and medium scale industries of Assam. Small scale industries were not included in this study due to certain difficulties in obtaining data. Moreover, the study was restricted for a period of only five years due to time constraints. Extensive study should be taken in near future to study the recent global practices which were not included in this study. For future research on Corporate Environmental Accounting and Reporting practices, efforts should be put at increasing the number of selected industries and the units in such industries as the present study is confined to only twenty five companies under the ten major industry groups of Assam. The need to examine the relationship between company's corporate environmental policy and performance will make the outcome of the research more robust. Finally, there is the need for researches in this area of accounting to consider the impact of corporate environmental performance towards better environmental management by the companies.

5.4 Conclusion

The final outcome of the study revealed some important findings, which have been obtained from analysis of primary and secondary data. It has been observed that the Environmental Accounting and Reporting practices of the selected industrial units of Assam are still in nascent stage. The majority of the disclosures of environmental information are descriptive in nature with little quantifiable data. There is also a lack of uniformity in disclosing environmental information in the Annual Reports of the selected companies of Assam under

industry groups. As there is no standardized compulsory environmental disclosure requirement, the disclosures are voluntary in nature and not comparable at all. Also, there is hardly any uniformity in Corporate Environmental Policies' in the major industrial units of Assam. So, an industry should adopt a uniform reporting and disclosure standards of environmental issues for the purpose of control and measurement of performance. Moreover, the implementation and formulation of Corporate Environmental Policy in case of major industrial units of Assam is very important to enhance their environmental performance in the long run. Most of the sample companies in industries have shown average performance in disclosing environmental information. Very few companies have adopted ISO 14001 towards Environmental Management System and conduct Environmental Audit. Almost all the industries under study have shown lesser importance towards Environmental Accounting. Only a few companies have disclosed limited accounting information in their annual accounts. However, it was observed that the high polluting industries were better in voluntary environmental disclosure than the low polluting industries.

On the whole, the status of voluntary environmental disclosure of the selected industries of Assam is not very satisfactory. The reasons behind the poor environmental disclosure practices may be its voluntary nature, poor environmental performance, due to lack of awareness on the part of company's management towards environmental protection, etc. Thus, Environmental Accounting and Reporting practices should be used as a tool by the companies in Assam for enhancing corporate accountability to different stakeholders and developing confidence and sincerity to the society in particular.