

## **Chapter VI**

### **Findings and Conclusions**

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#### **6.1 Summary, Findings and Conclusions**

The previous era of the twentieth century has been observed as the period of the environment. During this period apprehensions over pollution, climate change, resource exhaustion and other forms of environmental damage have amplified significantly. Safeguarding of environment has developed as an issue of prominence to mankind, which has also become concern of great standing to business enterprises.

Business enterprises are now running into with snowballing number of environmental laws and regulations, compression from external environment and concern of management and employees pertaining to environmental performance. In order to meet environmental encounters, business organizations have been evolving management schemes that are planned to attain organization's environmental goals and intentions.

The present study evaluated the impact and applications for environmental auditing in India. This research attempt stresses on link between objectives of expounding the opportunities for Environmental Auditing practices followed in India in conjunction with Environmental Accounting and compliance of Environmental Laws, Rules and Regulations. Attempt has been made to establish that the Environmental Auditing is advantageous in business enterprises from accounting and financial perspectives by using both, quantitative and qualitative methods.

The findings of the two case studies- first, the case of adoption and disclosure practices relating to environmental parameters in the Annual Reports of two hundred companies for one financial year and the second, the case of espousal and revelation practices relating to environmental parameters in the Annual reports in selected three companies for twelve financial years have proved that now Indian

corporates are on the path of applying some proven environmental protection activities leading towards sound Environmental auditing practices.

This research endeavor has been offered in Six chapters. The key summary and inferences derived from the present research work are as under:

*Chapter One* deals with the preliminary research work. This chapter deals with rationale of the study, objectives of the study; the methodology used for the research, and also spells out the plan of the study.

*Chapter Two* elucidates literature review carried out with reference to historic evolution and progression of Environmental Auditing theory and practices from the point of view of Environmental accounting and compliance aspects related to Environmental laws, rules and regulations. The literature review encompasses three different streams: emergence, evolution and establishment of environmental auditing. Need and relevance of environmental auditing is discussed in emergence section; Dominant Social Paradigm (DSP) and New Ecological Paradigm (NEP) are summarized in evolution section. And environmental accounting, environmental reporting and environmental auditing are explored in establishment section. Hence, this literature review presents an amalgamated view of environmental auditing.

It was observed and explored that Environmental Auditing did not witness evolution in a strict linear manner. Multiple significant happenings led to increasing need and demand of practice/s that may empower business entities to chalk out some remedies that may serve as an antidote to ongoing massive damage in the trajectory of environment.

The journey on evolution of Environmental auditing practice is narrated in order to suffice the dearth of a systematically documented record. In the context of accountability to stakeholders, how auditing exercise is useful for evaluation of sustainable development through sustainability reporting is illuminated. In the next part of the literature review the objectives of Environmental accounting in conjunction with Environmental Auditing tool is discussed. The role of

Environmental auditor is also explored. With regard to importance of compliance aspects of various prevalent Environmental laws, some significant enactments and peripheral issues have also been explored.

Review of Literature highlights some interesting findings as given below:

- i. Auditing in any enterprise or organization has been integral to the development of every society. Auditing exercise developed over the years and percolated to the every facet of business from financial perspective. Contemporary auditing is an outcome of a series of ordered and methodical processes.
- ii. Environment of mother Earth and ancient Indian view thereon expressed by some authors is noteworthy in the present context. Some stanzas of four Vedas cited in the concept papers are important. This literature review proffered the deep rooted Indian philosophy of symbiotic relation of Man and Environment and its significance in the present material world offering a key to mutually benefiting co-existence.
- iii. Over recent years, it has become obvious to both industry and the general public alike that the damage being caused to all facets of environment makes the existence itself unsustainable. The old approach to pollution prevention 'react and cure' has been recognized as an unsophisticated way of dealing with environmental problems, and is being superseded by a new phenomenon 'anticipate and prevent' approach, which is more penetrating and cost effective. The realization has led to the development of a wide range of Environment management techniques specifically aimed at reducing industry's impact on the environment.
- iv. In the context of tremendous surge in economic activities across the globe, the concept of 'Green Economy' and 'Decoupling' visualized by the United Nations Environmental Programme (UNEP) has been the guiding factor for future planning.
- v. Human dimension vis-a-vis Sustainable development has proven that the sphere of Environment must be natural and built, personal and collective, economic, social and cultural, technological, ecological and aesthetic.
- vi. 'Environmental audit' is found to be an emerging auditing tool and is of substantial interest in view of the increasing recognition that global warming and climate change have already been signaled out as the most

gruesome and harrowing threats to Earth. It is now accepted that the survival of the human kind (and of all living organisms for that matter) depends on the protection and sustenance of the environment and that no amount of cost incurred to achieve that purpose would be too high.

- vii. Although a great deal of research in business and social sciences has assessed attitudes towards social and environmental issues, little is currently known about the determinants of stakeholders' attitudes towards corporate environmental accountability.
- viii. The literature review reiterated the fact that environmental reporting has reincarnated itself in the form of environmental auditing. Earlier studies have also asserted the building of market reputation on following of environmental reporting practices. It was observed that corporations with proactive environmental programs have a competitive advantage because their better reputation resonates favorably with stakeholder groups such as customers, employees, and the public in general. Environmental reporting witnessed a major shift from being practised at the singular organizational level to the corporate level. From being just a practice environmental reporting has now taken the shape of an organizational conduct.
- ix. It is explored that reporting on the Environment serves many purposes. Although the evidence of excellent reports from individual companies is heartening, the general level and quality of information provided is very variable. Overall, increased comparability is required. The development of a consistent framework for reporting will help to speed up the move to environmental accounting and the provision of useful information.
- x. Some authors have observed that although the Sustainability Reporting Guidelines are not a management system, they can provide companies with an approach to achieving sustainable practices that involve all possible activities and/or processes of company. Involving all pervasive activities of the company increases the likelihood of achieving the desired outcomes successfully. Many initiatives in managerial accounting, such as Total Quality Management (TQM), Activity-Based Costing (ABC), Just-In-Time (JIT) production and distribution systems, and reengineering, appeared promising yet could not produce the desired solution in the form

of tools to curb environmental threatening activities at organizational levels.

- xi. Earlier Environmental audit was associated with Environmental Impact Assessment (EIA), which deals more with Environmental Science and Technology. The findings of Moor and Beelde, (2005) have pertinently established Environmental Audit and its relationship with Accounting and Financial Management. There are not only similarities but also direct overlaps between financial accounting and environmental management or reporting. Many environmental expenses will be expressed in the financial statements.
- xii. Environmental Management System (EMS) is an evolving area. Industry is in the process of developing Environmental Management System to address the problem of environmental protection. Environmental Auditing, an important component of environmental management system, is also in the early stages of its development. Therefore, existing body of knowledge on Environmental auditing is inadequate to provide an understanding of environmental auditing practices and procedures in the manufacturing sector.
- xiii. During the Environmental auditing, legislature aspects are required to be understood by the auditors as a part of Compliance audit.
- xiv. There are several environmental laws enacted by the Government. The legislatures' approach to pollution laws has been principally reactive. This opinion can be substantiated by the enactment of The Water Act which came in the background of the United Nations Conference on the Human Environment at Stockholm. It was found that all the decisions taken in various summits and conventions were responses to the disasters that were a jolt to entire mankind. The impetus has not been on proactive planning and road-mapping that may come practical in managing environmental protection.
- xv. The Air Act, the Environmental Protection Act were enacted in the aftermath of the Bhopal gas disaster, while the rules and notifications were seen as compliance with international obligations. While deliberating on various environmental disasters it was found out that in a rush to be on top of economic growth industries were established without even conducting

an in-depth study of its implications on environment. Remedial measures were undertaken without adequate scientific studies and documenting the threats to health and environment.

In *Chapter Three* the methodology of disclosure of Environmental Auditing aspects applied by different corporate enterprises in India has been discussed in detail. The objective of this research endeavor is to investigate the variables related to environmental disclosure and importance given to them by corporates after analysing corporate reports with the help of qualitative measures. This chapter has supplemented the research objectives in the following manner especially, in case of:

- studying application of ‘Environmental auditing’ i. e. assessment or evaluation with reference to ‘Environmental Disclosure’ practices and its impact in India.
- studying the objectivity of environmental reporting in India.
- studying the disclosure of environmental performance and assessment trends among select companies.

Having performed the content analysis of sample corporates, industry wise as well as individual company wise it was established that select environmental parameters have been given importance as part of annual reports. The results have been quantified in number as well as percentage. Following are the findings that came up while conducting the study of environmental disclosure parameters of Nifty 200 companies.

Major findings are-

- (i) Only sixteen companies have disclosed information related to all six parameters.
- (ii) Content analysis of 200 companies representing different industries having zero to highest degree of environmental sensitivity has revealed that all the companies have not given the same weightage to the disclosure of select environmental parameters.
- (iii) On the basis of content analysis of 200 Nifty companies, disclosure of selected six environmental parameters in the annual reports has revealed that:

- a. about 52 percent companies have disclosed carbon issues;
  - b. approximately 16 percent companies have adopted Global Reporting Initiative Guidelines;
  - c. nearly 41 percent companies have disclosed about ISO 14001;
  - d. about 76.5 percent have reported that they have adopted renewable energy measures;
  - e. approximately 38.5 percent companies have bagged awards and accolades for environmental performance and
  - f. nearly 50 percent companies have disclosed that they have conducted research and development activities in the environmental area.
- (iv) The Ministry of Environment, Forest and Climate Change (MoEFCC) had brought out notifications in 1989, with the purpose of prohibition/restriction of operations of certain industries to protect ecologically sensitive areas or areas of specific importance. Consequently, CPCB has notified some industries as environment sensitive. Even companies representing these groups of industries have not been found serious in environmental disclosures as part of their annual reports. Based upon six selected environmental parameters, broadly it has been observed that with respect to environmental sensitive industry-
- a. About 59% companies have taken initiatives to control and minimise the carbon footprints on planet earth and portrayed disclosure of such in Annual reports.
  - b. Approximately 20% companies have adopted Global Reporting Initiative (GRI) guidelines and disclosed about the same in annual reports to create the brand in the corporate sector as per globally well accepted trend.
  - c. Nearly, 54% companies have adopted ISO 14001 model of Environmental Management System (EMS) in their entity to run the entity efficiently with vision of environment protection in responsible manner and made the disclosure in the reports.
  - d. Many companies (89%) have followed practices in the area of Renewable energy against utilization of conventional source of energy in their entity and taken steps towards alternate energy

instruments and equipment to reduce the impact on environment of Earth.

- e. About 49% companies have bagged the awards and accolades for best practices and examples set in the areas of technological innovation, energy and water conservation, input material reduction, exploration and implementation of alternatives against use of scarce natural resources, afforestation drive, etc. towards environmental protection.
- f. Approximately 63% companies have invested in Research and Development towards better environmental practices in terms of environmental conservation, protection and pollution abatement to minimize the impact on environment and have made the disclosures in the annual reports.

(v) In Industrial manufacturing industry, 92 percent companies have reported about adoption of Renewable Energy measures towards environmental betterment. Largely, 67 percent companies have reported on Carbon Disclosure practices, 69 percent companies have undertaken R & D projects for protection of environment and 58 percent have made compliance with ISO 14001 requirements.

(vi) In Cement and cement products industry, all nine companies have reported on adoption of Renewable Energy measures towards environmental safeguard and betterment. Out of nine, seven companies have reported on Carbon Disclosure and five have invested and undertaken R & D projects for protection of environment and six companies have attempted to comply with ISO 14001 requirements. Seven companies have bagged awards for better environmental performance.

- It is noticeable here that, four companies out of nine have adopted GRI guidelines in reporting.

(vii) Under Automobile sector, majority companies have reported adoption of Renewable Energy measures towards environmental safeguard and betterment.

- More than half of the companies have reported on Carbon Disclosure, invested and undertaken R & D projects for protection of environment and attempted to comply with ISO 14001 requirements.

(viii) In Pharmaceuticals industry, almost 93 percent companies have performed very well on the adoption of Renewable Energy measures and 80 percent have made investment in R & D projects for protection of environment.

- Around 47 percent companies have attempted to comply with ISO 14001 requirements. And 27 percent companies have bagged Awards and accolades for achieving the best performances in environmental protection and pollution abatement.
- But, no company has adopted GRI guidelines in reporting.
- Reporting on Carbon Disclosure is found poor with respect to this industry.

(ix) Under Consumer goods sector, in substantial number i.e. eighteen out of twenty one companies have reported adoption of Renewable Energy measures towards environmental betterment, thirteen out of twenty one companies have made disclosures on Carbon Disclosure and fifteen have made investment in R & D projects for protection of environment.

- It is noticeable here that out of twenty one companies, not a single company has adopted GRI guidelines in reporting.

(x) In Energy industry, all the companies have reported adoption of Renewable Energy measures towards environmental betterment.

- More than half of the companies have reported on Carbon Disclosure, attempted to comply with ISO 14001 requirements and have bagged Awards and accolades for achieving the best performances in environmental protection and pollution abatement.
- It is pertinent to note here that, as compared to other industries here many companies (36 percent) have adopted GRI guidelines in reporting.

(xi) Under Telecom sector, all companies (100 percent) have reported adoption of Renewable Energy measures towards environmental betterment and all companies have reported on Carbon disclosures.

- Only few companies (20 percent) have invested and undertaken R & D projects for protection of environment; 20 percent companies have attempted to comply with ISO 14001 requirements and 20 percent companies have bagged Awards and accolades for achieving the best performances in environmental protection and pollution abatement.
- Further, no company has adopted GRI guidelines in reporting.

(xii) In Construction industry, majority companies have reported adoption of Renewable Energy measures towards environmental betterment. Many companies have reported on Carbon Disclosure, investment in R & D projects for protection of environment and compliance with ISO 14001 requirements and bagged Awards and accolades for achieving the best performances in environmental protection and pollution abatement.

- Few companies have adopted GRI guidelines in reporting.

(xiii) Under IT sector, nine out of thirteen companies have substantially reported the adoption of Renewable Energy measures towards environmental betterment, eight have reported disclosures on Carbon issues, nine have made investment and undertaking R & D projects for protection of environment and six out thirteen have complied with ISO 14001 requirements.

- Only two companies have adopted GRI guidelines in reporting.

(xiv) In Metals industry, 89 percent companies have reported adoption of Renewable Energy measures, 100 percent companies have reported on Carbon Disclosure and 89 percent have made investment in R & D projects for protection of environment.

- All companies have attempted to comply with ISO 14001 requirements.

- Approximately 67 percent companies in this segment have bagged Awards and accolades for achieving the best performances in environmental protection and pollution abatement.
- It is noteworthy here that, around three fourth (78 percent) companies have adopted GRI guidelines in reporting.

(xv) Under Textile sector, one out of two companies has reported on adoption of Renewable Energy measures, Carbon Disclosure and has bagged Awards and accolades for achieving the best performance in environmental protection and pollution abatement.

- But neither company has invested in R & D projects for protection of environment and nor attempted to comply with ISO 14001 requirements.
- In addition, no company has adopted GRI guidelines in reporting.

(xvi) Disclosure of Parameters in Media and Entertainment companies Out of three companies, only one case of reporting on Carbon Disclosure is found in this industry. No other parameter is disclosed in the annual reports.

(xvii) Under Chemicals industry, both the two companies have reported adoption of Renewable Energy measures and bagged Awards and accolades for achieving the best performances in environmental protection and pollution abatement.

- Further, one out of two companies has adopted GRI guidelines in reporting, made disclosures on carbon, had complied with ISO 14001 and made investments in Research and development for environmental betterment.

(xviii) Under Fertilizers & Pesticides sector, all companies have invested and undertaken R & D projects for protection of environment and also all of them have attempted to comply with ISO 14001 requirements.

- But no company has adopted GRI guidelines in reporting.

- (xix) Disclosure of Parameters in Hotels companies
- In Nifty 200, only one company represented Hotel sector.
  - Company has reported on adoption of Renewable Energy measures towards environmental betterment; adopted GRI guidelines in reporting and reported on Carbon Disclosure.
  - Other parameters in terms of investment in R & D projects, compliance with ISO 14001 requirements and bagging of any Awards and accolades have not reported.
- (xx) In Healthcare industry, only one company is part of Nifty 200.
- Company has not reported any selected parameter in its Annual Report.
- (xxi) Under Services sector, four out of seven companies have reported adoption of Renewable Energy measures, Carbon Disclosure, investment in R & D projects and attempted to comply with ISO 14001 requirements.
- Here, two out seven companies have bagged Awards and accolades for achieving the best performances in environmental protection and pollution abatement. Further, only one company has adopted GRI guidelines in reporting.
- (xxii) Under Financial services sector, twenty seven out of forty seven (57 percent) companies have reported adoption of Renewable Energy measures disclosures and fifteen (32 percent) have reported Carbon disclosure in annual reports.
- Here, only six out of forty seven (13 percent) companies have invested and undertaken R & D projects for protection of environment, four (9 percent) companies attempted to comply with ISO 14001 requirements and seven (15 percent) companies bagged Awards and accolades for achieving the best performances in environmental protection and pollution abatement.
  - It is noticeable that adoption of GRI guidelines in reporting is also found in 2 out of 47 companies.

(xxiii) It is found that there is significant difference in environmental disclosure practices in Annual reports pertaining to selected six environmental parameters applied to selected sample.

In *Chapter Four* the casestudy with a view to understand the process and issues underlying the disclosure practices followed by three giant Indian companies has been discussed.

The objective of this case study has been to expound environmental auditing practices by corporates in India with intention to check environmental auditing practices and its impact. It was found out that the companies showed poor initiation and also that the response of statutory and regulatory bodies as well as corporates towards environmental auditing practices in India has been not that encouraging.

This case study has been used to establish a connect between the theory of environmental auditing and the practices of environmental reporting at the actual ground level in the selected three companies. The rationale of existence of uniformity in the guidelines, procedures and practices of environmental accounting, environmental auditing and environmental reporting has been practised of late. There existed several unanswered questions about the verification of organizational ethics and conduction of these ethics in actual practice.

Following findings are noteworthy from the Case study of Chapter Four-

1. With respect to Carbon issues parameter –

Industrial activities performed by the companies affect directly or indirectly in adverse way to the environment of our mother Earth. In wake of moral consideration, Indian corporates have started disclosing these issues in their Reports.

- Tata Steel Ltd. might have begun its journey of disclosing carbon issues from Financial Year 2003-04 or even earlier, which is remarkable. It has disclosed this parameter evenly throughout the selected duration of twelve years.

- L & T Ltd. also might have started disclosing carbon issues from Financial Year 2003-04 or even earlier, which is notable. Company has disclosed this parameter consistently throughout the particular duration of twelve years.
- Reliance Industries Ltd. has initiated disclosure of carbon issues from the Financial Year 2005-06. It has disclosed this parameter consistently throughout ten years out of the selected duration of twelve years.

2. With regard to adoption of Global Reporting Initiatives (GRI) Guidelines – GRI has pioneered corporate sustainability reporting since 1997, transforming it from a niche practice to one now adopted by a growing majority of organizations. GRI is an international, independent organization that helps businesses, governments and other organizations understand and communicate the impact of business on critical sustainability issues such as climate change, human rights, etc. The GRI Sustainability Reporting Guidelines are now generally regarded as the most trusted and respected.

- Tata Steel Ltd. might have begun its drive of adopting Global Reporting Initiatives Guidelines from Financial Year 2003-04 or even earlier, which is noteworthy. It has followed Guidelines evenly throughout the selected duration of twelve years.
- L & T Ltd. has adopted Global Reporting Initiatives Guidelines from Financial Year 2007-08. It has prepared the Reports following the GRI Guidelines from F. Year 2007-08 onwards.
- Reliance Industries Ltd. has adopted Global Reporting Initiatives Guidelines from Financial Year 2004-05. Company has prepared the Reports in consonance with the requirements of the GRI Guidelines from Financial Year 2004-05 onwards which is noticeable.

3. With respect to formulation of Environmental Policy – Environmental Policy statement prepared by the entity can become a guide for the activities, processes and operations to be carried out considering the objective of minimizing the impact on planet Earth. On these lines, companies

have started taking initiatives on this aspect, which can be considered as integral precursor towards the Environmental Auditing exercise.

- Tata Steel Ltd. might have begun its journey of preparing and disclosing Environmental Policy of the company from Financial Year 2003-04 or even earlier, which is significant. It has disclosed this parameter evenly throughout the selected duration of twelve years.
- L & T Ltd. also might have started preparing and disclosing Environmental Policy of the company from Financial Year 2004-05 which is notable. Company has disclosed this parameter consistently throughout the eleven years.
- Reliance Industries Ltd. has initiated a drive of preparing and disclosing Environmental Policy of the company from Financial Year 2003-04 or even earlier, which is noteworthy. It has disclosed this parameter evenly all over the selected length of twelve years.

4. With respect to compliance of ISO 14001 Certification –

ISO has a multi-dimensional attitude to cater the requirements of all stakeholders from trade, industry, governmental establishments and customers, as well as nongovernmental organizations, in the field of the environment. ISO 14001 is the most recognized framework for Environmental Management Systems (EMS) applied that aids organizations together to accomplish better the impact of their actions on the environment and to validate all-encompassing environmental management.

- Tata Steel Ltd. might have taken initiative of adopting and disclosing ISO 14001 Certification from Financial Year 2003-04 or even earlier, which is incredible. It has revealed this parameter evenly throughout the selected duration of twelve years.
- L & T Ltd. also has started adopting and disclosing ISO 14001 Certification from Financial Year 2004-05, which is noticeable. Company has disclosed this parameter in eleven years out of the selected duration of twelve years.

- Reliance Industries Ltd. has commenced disclosure of ISO 14001 Certification from Financial Year 2004-05.

5. With regard to adoption of Renewable Energy sources in place of conventional energy sources-

Renewable energies indicate energies that are non-traditional and have low environmental impact. The term alternative energy is also used in contrast with fossil fuels according to some sources. By most definitions, alternative energy doesn't harm the environment. In present case study it is explored that in select three Indian companies, whether these three have adopted the measures for renewable and alternate energy and how this parameter of environmental concern is addressed to stakeholders in the reports:

- Tata Steel Ltd. has begun disclosing action taken in the field of Renewable energy adoption from Financial Year 2008-09.
- L & T Ltd. has started disclosing steps taken in the field of Renewable energy adoption from Financial Year 2007-08.
- Reliance Industries Ltd. has started unveiling measures taken in the field of Renewable energy adoption from Financial Year 2006-07.

6. With respect to institutionalized Research and Development activities in entity to protect environment -

Environmental research offers understanding for the expansion of sound evidence-based policies and tactics towards preservation of natural resources. Worldwide, environmental research has provided important inputs for formulating strategies to confirm ecological safety and sustainable development:

- Tata Steel Ltd. might have activated its drive of adopting and disclosing Research and development activities in environment from Financial Year 2003-04 or even earlier, which is notable. Company has disclosed this parameter evenly throughout twelve years.
- L & T Ltd. also has started the drive of adopting and disclosing Research and development activities in environment from

Financial Year 2003-04 or even earlier, which is prominently appreciable.

- Reliance Industries Ltd. has initiated efforts of adopting and disclosing Research and development activities in environment from Financial Year 2005-06.

7. With regard to bagging of Environmental awards and accolades as rewards in lieu of best activities and practices in entity to nurture the nature –

Awards and accolades deliver incentive to every individual or entity for healthier performance. In corporate domain numerous kinds of presentations are commended in terms of various awards by different organisations and institutes. Here, the awards and recognition bagged for Environmental activities and processes are to be considered for the study:

- Tata Steel Ltd. has bagged Environmental awards and accolades from Financial Year 2003-04 or even earlier, which is incredible. Company has disclosed this parameter throughout twelve years.
- L & T Ltd. has bagged Environmental awards and accolades from Financial Year 2004-05.
- Reliance Industries Ltd. has bagged Environmental awards and accolades from Financial Year 2003-04 or even earlier, which is noticeable. Company has disclosed this parameter throughout twelve years.

8. From financial data analysis it is found that the company with sound track record of profitability is performing well towards the measures to be taken for carbon remedial issues, research and development expenses and some innovative environmental protection plans and policies.

It is found that the company having sound profitability can perform well on environmental issues and disclose those aspects positively in the annual reports and sustainability reports. In this study, select three corporates have shown considerably good track record of profitability and simultaneously satisfactory performance in terms of selected environmental parameters which have been disclosed in their form of communiqué to the stakeholders.

Quantitative analysis (Survey study) is carried out in Chapter Five where in order to obtain views of practicing accountants, professionals, managers, research scholars, executives, academicians and post graduate students with the related discipline of accounting and auditing a Structured Instrument was administered. The objective of this Structured Instrument is to explore the awareness and practicability of environmental accounting, environmental auditing and environmental compliance as holistic environmental conditioners in preservation and protection of environment from further destruction.

In *Chapter Five* the theoretical understanding of environmental accounting framework and documentation of environmental accounting disclosure practices of corporates has been explicated illustrating the application of 'Environmental Auditing' i. e. assessment or evaluation with reference to 'Environmental Disclosure' practices and its impact in India. The present study has been carried out towards the assessment of driving forces for implementation of Environmental Auditing. The objective here in this study has been not only to analyze data but also to obtain understanding from the executives, professionals and academicians with respect to the Environmental Accounting aspects, Environmental Compliance scenario and Environmental Auditing practices in enterprises in India.

Significant Findings of Survey study are as under:

- I. It has been observed that the majority (69.5%) of respondents were Male and rest represent Female (30.5%).
- II. It is found that 30.5% respondents were below 25 years and 23.7 % between 25-30 years and 27.4% respondents were between 31-35 years. Only 2.6% respondents were above 50 years.
- III. It has been observed that 65.3% respondents have done Graduation from Commerce, 16.8% have done Business Administration studies, 3.7% have pursued graduation from Arts and Science each. Respondents from Engineering field have found 3.2%.
- IV. Among all the respondents with Professional Qualifications, maximum respondents were Chartered Accountants (24.7%) followed by Company Secretary and Cost and Management Accountant.

- V. Out of the twelve statements considered for evaluation of the Environmental aspects on general awareness and contemporary issues;
- whether One ‘Carbon Credit’ is equivalent to reduction in Two Ton emission of Carbon Dioxide (CO<sub>2</sub>) (mean value = 1.71) was replied as the important contemporary issue,
  - followed by the concept of UNEP’s (United Nations Environment Programme) ‘Decoupling’ which provides for breaking the chain between the economic good and environmental bad (mean value = 1.43),
  - followed by ‘Triple Bottom Line’ Reporting i.e. Reporting covering the Profit (economic), People (social) and Planet (environment) aspects incorporated by Corporates in their reports (mean value = 1.23) and
  - awareness about ‘Carbon Credit’ (mean value = 1.20).
- VI. Almost all the respondents responded on average one plus but ‘Carbon Credit’ and ‘Decoupling’ were given more importance. The above presented result has provided evidence that even contemporary issues on environmental front are appealing to respondents.
- VII. Out of Total 190 respondents, 177 respondents (Male=121 and Female=56, so 68.4% and 31.60% respectively) were aware about various threats to planet Earth’s environment. 13 respondents (Male= 11 and Female= 02) were found unaware of such threats.
- VIII. From total, 177 respondents who were aware about various threats to environment, 116 were B. Com.; 05 were B. A.; 31 B. B. A.; 07 B. Sc.; 06 B. E. and 02 others. So, 65.5 percent graduates responding about awareness were from Commerce stream, 17.5 percent from Business Administration/ Studies and 7.4% were from Science and Engineering field. Total 13 respondents who were unaware about various threats to environment, 08 were from Commerce discipline.

- IX. From total, 167 respondents who believed that environmental issue play role in accounting, 53 were below 25 years; 40 between 25 to 30; 49 between 31 to 35, 10 between 36-40; 14 between 41 to 50 and 01 above 50. Hence, it is evident that in total 85.03% respondents who believed that environmental issue play role in accounting are below 35 years of age. And 14.97% respondents were above 36 years.
- X. From total, 166 respondents who believed that 'Global warming' has become the real 'warning' to mankind, 50 respondents were below 25 years; 39 respondents were between 25 to 30; 46 respondents were between 31 to 35, 15 were between 36-40; 13 respondents between 41 to 50 and 03 were above 50. Hence, it is evident that in total 46.3% respondents who believed that 'Global warming' has become the real 'warning' to mankind, are above 31 years of age.
- XI. From total, 187 respondents who believed that environmental pillar is important for sustainable development, 55 respondents were below 25 years; 45 respondents were between 25 to 30; 52 respondents were between 31 to 35, 15 were between 36-40; 15 were between 41 to 50 and 05 respondents were above 50. Hence, it is noticeable that in total 46.5 percent respondents believed that environmental pillar is important for sustainable development, are above 31 years of age.
- XII. It can be seen from above that 146 respondents (76.84%) were aware about 'Triple Bottom Line' Reporting by corporates in their reports. 105 Male (71.0%) and 41 Female (28.1%) have supported above. Here it would be noteworthy that total 44 respondents were still not aware about the 'Triple Bottom Line' Reporting by corporates in their reports.
- XIII. From total, 146 respondents who were aware about 'Triple Bottom Line' reporting by corporates in their reports, 58 respondents were below 25 years; 45 were between 25 to 30; 52 respondents were between 31 to 35, 15 were between 36-40; 15 were between 41 to 50 and 05 respondents above 50. Here it is noticeable that 20 (45.5%) respondents of below 25 years age were

found unaware about 'Triple Bottom Line' reporting by corporates in their reports.

XIV. Here it would be noteworthy that total 81 (42.64%) respondents were still not aware about the concept of UNEP's Decoupling which provides for breaking the chain between the economic good and environmental bad. It can be seen from above that 109 respondents (57.36%) were aware about the concept of UNEP's Decoupling. 78 Male (71.6%) and 31 Female (28.4%) have supported above.

XV. It is noticeable that 60 (74.10%) respondents of below 35 years age were found unaware about the concept of UNEP's Decoupling.

- It would be noteworthy that total 152 respondents (80%) were aware about the concept of Carbon credit whereas 38 respondents (20%) were not aware about it.
- Here it is noticeable that 25 respondents (65.8%) of below 25 years age were found unaware about Carbon credit.
- It would be noteworthy that total 135 respondents (71.05%) have declined that one carbon credit is equal to reduction in Two ton emission of CO<sub>2</sub>.
- Analysis has depicted that with respect to salient feature of Environmental accounting
- it helps in planning the Cost control and/or Cost reduction (Mean=3.70) followed by other salient feature
- it evaluates the Impact of entity's project on surrounding environment (Mean=3.69),
- identifies the evaluation of Investments vis-à-vis savings on consumption or usage of resources (Mean=3.62) and
- promotes designing several processes using environmental friendly technology (Mean= 3.31).

XVI. Many respondents have recognized the salient features of Environmental Accounting and identified the advantages emerging from applicability of

Environmental accounting in organisations. It has been evident from the responses that Environmental accounting practices in organisations helps in planning the Cost control and/or Cost reduction of products or articles and reasonable relationship with clients on basis of ‘Green products/ services’ can reflect the environmental friendly attitude in economic development of society.

- XVII. With respect to reasons leading to Non-adoption or minimal adoption of Environmental auditing practices at large, respondents have opined that there is Lack of real will and commitment by the political wing/s towards addressing implementation of protective measures for conservation of environment (Mean= 4.36) and lack of Specific policy on such Emerging issue (Mean= 4.33). Difficulty in measuring Cost-Benefit analysis from such practices (Mean= 4.16) has also been highlighted by respondents.

Another part of the findings showed the result of inferential statistics. Inferential statistics including reliability test, Chi square, Factor analysis and single factor ANOVA analysis were conducted.

- The reliability test Cronbach alpha coefficient determined that the attributes/opinions were strongly related to each other and to the composite score. All dimensions of the questionnaire related with measuring opinion were tested and the Chronbach’s alpha ranged from 0.810 to 0.925 which really showed internal reliability of the scale. Testing the scale for reliability revealed that for all the statements Cronbach alpha coefficient was 0.887. Therefore, this scale is considered reliable.
- Various Chi-square tests were conducted for checking influence of one factor over the another; the analysis revealed that there is significant influence of Age, Education Qualification i.e. Graduation, Post-Graduation, and Professional Degree on understanding of general awareness on Environment and some contemporary issues, Environmental Accounting and Auditing.

- The ANOVA statistics revealed that on the opinion regarding features of Environmental Accounting as well as advantages emerging from such practice, in all observations null hypothesis fails to reject (Sig. value>0.05). So, it can be inferred that no significant difference is noted between gender of the respondents and features of Environmental Accounting as well as advantages emerging from such practice.
- Another ANOVA statistics revealed that on the opinion regarding features of Environmental Accounting and advantages emerging, in all observations null hypothesis fails to reject (Sig. value>0.05) except statement no. 6. So, it has been inferred that respondents from different Post-graduation backgrounds have agreed that owing to Features of Environmental Accounting some Advantages emerge. But, respondents from different Post-graduation backgrounds have not agreed that due to features of Environmental Accounting, collection and recording of environmental costs can further endorse precise costing.
- Another ANOVA statistics revealed that regarding different age groups and observation on compliance of applicable Environmental Laws, Rules and Regulations by the entities, in majority observations null hypothesis fails to reject (Sig. value>0.05) except statement no. 2 and 4. So, it has been inferred that respondents of different Age groups have opined that all organizations do not observe adoption of Environmental Calendar activities viz. creating environmental awareness by celebrating 5th June as World Environment Day, 22nd April as Earth Day, 21st March as World Forestry Day, etc. Respondents of different Age groups have opined that all organizations do not address the issues pertaining to National Environment Policy 2006 viz. Pollution Abatement, adoption of Clean Technologies and innovations, Biodiversity, Traditional Knowledge and Cultural Heritage Conservation, etc.

## **6.2 Objective wise Findings**

The main objective of this research endeavor is to carry out the systematic study of impact and applications of Environmental audit practice in India. In addition, to understand the effective use of Environmental audit as a tool to evaluate the level

of Corporate Environmental Disclosure in Indian companies qualitative as well as quantitative measures are integrated.

**Objective 1, 2 and 3:** To expound the theoretical understanding of environmental accounting frame work. To document the environmental accounting disclosure practices of select corporates. And to study application of ‘Environmental Auditing’ i. e. assessment or evaluation with reference to Environmental Disclosure practices and its impact in India.

- The present study reveals that Environmental Accounting offers the advantages. The salient features offered by environmental accounting make it a useful practice. But, in survey study it is found that largely the entities do not provide accounting treatment for environmental liabilities in the financial statements. For this purpose, a Structured Instrument was developed and administered.
- With respect to Environmental auditing practice, it is found in the survey study that there are certain reasons leading to non-adoption or minimal adoption of this practice in India viz. Lack of real will and commitment by the political wing/s towards addressing or implementation of protective measures for conservation of environment; lack of specific policy on such emerging issues; and difficulty in measuring Cost-Benefit analysis from such practices.

**Objective 4 and 5:** To study the objectivity of environmental reporting in India. And to gauge the relationship of firms’ operating level and environmental disclosure.

- From the findings of case study conducted on Nifty 200 companies, it is revealed that after introduction of reporting requirement as per ‘Business Responsibility Report’, Indian corporates have begun disclosing the environment related information in their Reports. But, findings exhibit that Indian corporates have not reported selected environmental parameters with objectivity.

- It is found from case study of select three Indian companies that the company having sound profitability can perform well on environmental issues and disclose those aspects positively in the annual reports and sustainability reports. In this study, select three corporates have shown considerably good track record of profitability and simultaneously satisfactory performance in terms of selected environmental parameters which have been disclosed in their form of communiqué to the stakeholders.

**Objective 6 and 7:** To evaluate the extent of compliance of the ISO 14001 (EMS) requirements on environmental disclosures by select corporates. And to study disclosure of environmental performance and assessment trends among select companies.

- From the case studies carried out in this Research endeavor, findings of disclosure analysis reflect that trend has begun to adopt and comply with ISO 14001 requirements by the Indian companies. The companies with sound profitability have adopted ISO 14001 requirements as a regular environmental management system.
- It is perceptible now that Indian corporates have begun disclosing certain environmental parameters in the annual reports and sustainability reports but still the trend of disclosures in the companies belonging environment sensitive industries is not satisfactory.

**Objective 8 and 9:** To assess the driving forces for implementation of Environmental audits. And to ascertain the views of practising accountants, company directors, auditors, members of the professional bodies and managers with regard to the practice and utility of environmental accounting and auditing information.

- For this purpose a Structured Instrument was developed and administered to evaluate the driving forces for implementation of Environmental audits. The respondents have agreed that entities can improve competitiveness by making customers and society increasingly aware of environmental issues by disclosing or addressing them in the annual reports. Respondents have

agreed that a proficient environmental reporting is the basis of enduring profitability and decent economic progress.

- In the survey study respondents have opined that upon institutionalization of environmental auditing practice certain advantages emerge viz. increase in the management awareness on environmental issues; avoiding of fines for noncompliance; cost savings from waste minimization and avoiding environmental risks and early identification of issues and problems before regulatory enforcement action.
- Respondents have opined that organisations have not developed facilities and programmes for the treatment, storage or disposal of hazardous wastes. It implies that convincing efforts are required on the front of industrial waste management.

### **6.3 Further Research Scope**

After institutionalization of environmental auditing, future researches should aim at developing a system of feedback in order to ensure that the feedback ascertains in improving standards of environmental auditing in an evolved manner, along with improving the reporting framework.

The auditor should provide the feedback to ‘auditee’ regarding emergent issues and bottlenecks in the process of environmental auditing practice along with maintaining proper documentation of the same.

There is still a lot of scope for further studies to explore the relationship between the disclosure of environmental parameters and profitability of entity. An attempt can also be made to explore the possibilities of environmental reporting and auditing practices for Micro, Small and Medium enterprises engaged in various industrial and manufacturing operations.

### **6.4 Conclusions**

With reference to Environmental Auditing practices in India, it is revealed that there is still tremendous scope to exercise this practice. Yet the criteria or parameters have not been uniformly identified by the corporates. Even the

researchers have little explored this practice from Accounting, Compliance and Auditing perspective.

Here, it would be pertinent to note that companies should be made aware of the environmental policy as well as encourage incorporating environmental protection measures in their mission statement to protect and nurture the environment, by creating moral pressure with the help of social awareness and sensitization programmes. For all the identified environmental sensitive industries, adoption of ISO 14001 should be made mandatory along with the stipulated requirements.

We live in a world of challenge and change. Shifting landscapes in the environmental, social and governance arenas constantly test our abilities to create innovative approaches to address global issues, such as climate change and human rights as well as local issues, such as protection and nurture of environment. Within this flux and flow, the trinity of environmental accounting, environmental auditing and environmental reporting should be practised with fair conduct.

In the light of the present study it becomes necessary to make environmental auditing more meaningful and effective for entities in general and companies in particular. Even our ancient Indian scriptures can be studied thoroughly to understand the basics of environment and preservation cum nurturing of our planet Earth.

## **6.5 Recommendations**

The need of the hour is to prescribe some environmental parameters to be adopted by the business entities and same to be disclosed in the annual reports. Each corporate small, medium or large engaged in business should disclose their performance in the report format of the organization.

In addition to the role of regulatory and monitoring authorities viz. Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCBs), some agency format can be established wherein the Government departments, environmental groups, eminent environmental experts, nodal financing agencies,

premier professional bodies (viz. ICAI, ICMA and ICSI), some NGOs which have proven track record in the field of environment, etc. can play major role as watchdogs.

Financial experts, professional accountants and prominent auditors, chartered engineers, legal experts, technical experts, registered medical practitioners and renowned environmentalists should be given assignments to draft the policy statement, guidelines in order to devise holistic reporting framework based on certain environmental parameters.

A separate nodal agency comprising of industry related experts (experts from fertilizers, tannery, sugar, chemical, petroleum, steel, pharmaceutical, etc.); social scientists, researchers, non-political eminent leaders should be formed zone wise across the country with the objective of (i) drafting the policy statement of the industries; (ii) framing guidelines to devise holistic reporting framework based on environmental parameters; (iii) and devising training programs for accountants and auditors, industry management and employees keeping in mind the region specific geographical and climatic change conditions as well as environment status report.

There is an urgent need of debates and brainstorming to further conceptualize environmental accounting, auditing and reporting in curriculum of various professional courses in different disciplines viz. commerce, law, science, engineering, etc. Cafeteria approach should be adopted while designing the course curriculum at various levels of graduation and post-graduation and capsule courses can also be offered by the higher education institutions. Higher educational institutes and other professional bodies should create further training opportunities for environmental auditors so that trained environmental auditors can extend their contribution to the business community.

It is difficult to find professional environmental auditors in India therefore, the term environmental auditor needs to be vehemently impressed upon on the lines of financial auditors. Accountants and Auditors have traditionally not been associated with the conservation or environmental movement. The role of

environmental auditors as providers of information, reports, and compliance in business and government decisions should be encouraged. Environmental auditors should take efforts to spread awareness and educate the clientele on practice of environmental accounting and auditing.

Present times demand progressive approach on Environmental auditing as a tool to identify risks and areas that need to work upon, improving the environmental protection and preservation not only in industries but among masses at large. Auditing should be perceived as a means in providing realistic improvement in terms of environmental safeguard. And benefits of environmental auditing need to be propagated.

Industry should be encouraged to set up internal environmental management groups or departments so that a concerted approach involving the members is adopted to minimize the impact on environment of detrimental operations and processes. It would be pertinent to note that companies should be made aware of the environmental policy as well as encourage incorporating environmental protection measures in their mission statement to protect and nurture the environment, by creating moral pressure with the help of social awareness and sensitization programmes. For all the identified environmental sensitive industries, adoption of ISO 14001 should be made mandatory along with the stipulated requirements.

The absence of standardized environmental reporting practices and disclosure techniques at both the national and international levels as well as legal enforcement spur the advocacy of having mandatory environmental reporting practices for manufacturing industries under the supervision of some regulatory and statutory bodies. Though the service sector poses lesser threats on the environment yet environmental parameters like renewable or alternate energy measures should also be prescribed to be adhered to and complied.