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   REVIEW OF LITERATURE

   NEED/IMPORTANCE OF THE STUDY

   STATEMENT OF THE PROBLEM

   OBJECTIVES

   HYPOTHESES

   RESEARCH METHODOLOGY

   RESULTS & DISCUSSION

   FINDINGS

   RECOMMENDATIONS/SUGGESTIONS

   CONCLUSIONS

   SCOPE FOR FURTHER RESEARCH

   ACKNOWLEDGMENTS

   REFERENCES

   APPENDIX/ANNEXURE

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CONTRIBUTIONS TO BOOKS

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

JOURNAL AND OTHER ARTICLES

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

CONFERENCE PAPERS

- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

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- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

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WEBSITE

- Garg, Bhavet (2011): Towards a New Natural Gas Policy, Political Weekly, Viewed on January 01, 2012 http://epw.in/user/viewabstract.jsp

CORPORATE CARBON DISCLOSURE THROUGH SUSTAINABILITY REPORT - AN INDIAN EXPERIENCE

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ABSTRACT

Climate change is a major environmental challenges of our time, posing greatest threat to sustainable development globally and regionally. The root cause of it is increasing concentration of Greenhouse Gases (GHGs) in the atmosphere by human activities like manufacturing, transportation, deforestation and so on. Considering the risks as real, Government of India has launched National Action Plan for Climate Change known as NACCC, which targets to reduce GHGs emission by 20 % in India by the year 2020 compared to base year 2005. Indian companies generate around 31% of the country's CO2 emissions and therefore they are one of the important players in the fight against climate change. This study is undertaken with two objectives namely 1.to know whether climate change has been a material issue for Indian companies which made Sustainability Report for 2010 ? and 2. If material issue, what is the carbon disclosure made by such companies? The disclosure is measured on the basis of guideline on 'Global Framework for Climate Risk Disclosure' which incorporates two voluntary disclosures namely GRI framework and CDP (apart from third one namely financial regulatory disclosure in Security Exchange Commission not relevant in Indian context), taking in all 35 items. Out of 24 companies which made Sustainability Report for the year 2010, climate change has been material issue for 20 companies, which were further studied to seek answer to objective 2. The findings showed overall disclosure score of 63 % (with 50 % in emission disclosure, 87% in emission management, and 0.25% and 0.15 % in physical and regulatory risk disclosure category). Overall, the results of the study indicate that Sample Indian Companies have started the journey for carbon emission reduction in proactive manner and are on the right tract to align their businesses with national agenda of low carbon economy and thereby achieve sustainable development.

KEYWORDS
carbon disclosure, carbon emission, carbon emission reduction, , Climate change, sustainable development.

INTRODUCTION AND CONTEXT OF THE STUDY

The climate change, one of the major environmental global challenges of our time has adverse consequences for human health, ecological and socio-economic systems, posing greatest threat to sustainable development globally and regionally. The root cause of this problem is increasing concentration of Greenhouse Gases (GHGs) in the atmosphere by human activities like manufacturing, transportation, deforestation and so on. Over a decade ago most countries of the world joined an international treaty known as the 'United nations Framework Convention for Climate Change (UNFCCC) to address the danger of global climate change and reduce the global warming to the extent inevitable. Later on number of nations including India ratified to Kyoto protocol, which is an international and legally binding agreement to reduce greenhouse gas emission worldwide by assigning mandatory targets for signatory nations. For Kyoto protocol purpose for the period 2008-2012, the world is divided into two categories –annex 1 countries (developed countries) who have to reduce their emission of 6 specified greenhouse gases known and non annex 1 countries (India falls in non-annex 1 countries), who are the receivers in short term in terms of CDM projects (which helps to bring clean technologies from developed countries) and carbon credits (which generates revenue by selling it to Annex 1 countries).

Climate change is a long term problem requiring years of sustained efforts. Considering the risks as real, Government of India has launched National Action Plan for Climate Change known as NACCC, which targets to reduce GHGs emission by 20 % in India by the year 2020 compared to base year 2005. Eight National Missions are being launched for implementation through the respective nodal Ministries. Further, the Planning Commission is now finalizing a blueprint for the 12th five year plan, to enable the Indian economic growth story to not only follow a low-carbon route, but also to fulfill the voluntary GHG emission reduction targets.

CLIMATE CHANGE AND CORPORATE SECTOR

While the government has initiated several such actions, the role of business firms in mitigating and adapting to carbon emission needs to be discussed as they are seen as contributing significantly to environmental degradation through GHGs emissions. Indian companies use over 40% of the commercial energy produced in the country and generate 31% of the country's CO2 emissions[1]. Their involvement is thus important in the fight against climate change since they can drive technological innovation and adoption of environment - friendly technologies and practices, thus reducing GHGs emissions. In a 2008 survey conducted by the ASSOCHAM, only 20% of the respondent companies had initiated actions in response to climate change[2]. In a 2009 PWC survey of 62 top CEOs in India, the response was more positive; suggesting that Indian business has gradually gone up its responses to climate change[3]. The CDP –India 200 Report 2010 study remarked **"**There is a visible 'shift' within the Indian industry to mitigate and adapt to climate change impacts, despite lack of any regulatory requirements for GHG abatement. The positive response of Indian businesses to CDP over the last four years is an indication of this change and their willingness to address climate change[4]"

As evident from above, few enlightened companies in India, committed to sustainable development have started taking proactive role in handling climate change issue as a part of strategic management for sustainable development of their business and thereby align with national ecological agenda of climate change. The handling of climate change issue requires system approach to carbon management which includes carbon measurement, governance and strategy, carbon reduction and innovation, carbon disclosure and monetization of reductions and reduction of risk.

CORPORATE CARBON DISCLOSURES

There are two global disclosure frameworks related to carbon disclosure namely Carbon Disclosure Project (CDP) which specifically addresses the issue of climate change and Global Reporting Initiative (GRI) based on 'Sustainability Report' framework, which takes climate change as a part of sustainability. Though both the frameworks take into consideration, system approach to carbon management, they adopt different methodology and purposes. While CDP is based on questionnaire survey on annual basis, initiated for the purpose of clean investment, Sustainability Report is initiated for sustainability development and is based on annual voluntary reporting mechanism.

The research shows that there is a higher likelihood of voluntarily disclosing carbon emissions by firms with superior environmental performance (relative to the industry median), conditional on firms taking environmentally proactive actions (Ella Mae Matsumura , Rachna Prakash and Sandra C. Vera-Muñoz 2011) .

As the corporate carbon disclosure is not regulatory requirement in India and mainly in non-financial nature, such enlightened Indian companies may find it most appropriate to report their carbon management initiatives and performance as a part of sustainable development strategy through voluntary global reporting framework of 'Sustainability Report' as per GRI guidelines.

GRI describes, it as a network-based organization that has pioneered the development of the world's most widely used sustainability reporting framework and is committed to its continuous improvement and application worldwide. The Sustainable reporting[5] as per Global Reporting Initiative (GRI) guidelines is very comprehensive framework to demonstrate the organization's commitment to sustainable development. Principles and indicators that organizations can use to measure and report their economic, environmental, and social performance are part of this framework. The Guideline "G3" is the foundation of the Framework.

The G3 Guidelines outlined in the disclosure framework are such that the organizations can voluntarily, flexibly, and incrementally adopt. The Framework is applicable to organizations of any size, constituency or location, and has been used already by many hundred organizations around the world as the basis of their sustainability reporting. Information-seekers can more accurately interpret disclosed information if it is communicated through the GRI's credible, comparable framework. The flexibility of the G3 format allows organizations to plot a way for continual improvement of their sustainability reporting practice. Sustainability reporting includes three bottom-lines namely profit, people, planet. The planet includes various environmental aspects including carbon management[6].

While defining the content of the report, G 3 guideline encourages to identify topics to be incorporated in Sustainability Report of a particular company using the principle of materiality, stakeholder inclusiveness, sustainability context and guidance on setting the report boundary.

The enlightened Indian companies who have considered climate change as material issue in sustainability context can voluntarily report it as a part of sustainability report. In the year 2010, (as on February 23, 2011) world over 1796 companies made sustainability Reporting as per GRI guideline, of which 24 companies were from India.

REVIEW OF PREVIOUS RELATED STUDIES

Ioannou and serafeim[7] (2011) studied "The Consequences of Mandatory Corporate Sustainability Reporting". The purpose of the study was to investigate whether mandatory disclosure of sustainability information has significant consequences on managerial practice. The study is based on 58 countries corporate disclosure practices. For the study, the countries have been divided into two categories namely countries with mandated sustainability disclosures and voluntary disclosures. The dependent variable studied were: Social Responsibility, Sustainable Development, Employee Training, Corporate Boards, Ethical Practices, Bribery & corruption, Managerial Credibility. India also was also one of the country in sample countries studied for the purpose. In the context of India, the said study findings suggest that in countries with voluntary sustainability reports the sustainability development increases.

In 2010, the CDP in partnership with WWF-India and CII-ITC Centre of Excellence for Sustainable Development[8] asked India's largest 200 companies on the National Stock Exchange (NSE) to disclose what action they are taking to address climate change. The CDP 2010 study got the response from 51 companies from top 200 companies as per market capital in national Stock Exchange. The methodology of the study was questionnaire survey. Based on various response to questionnaire, the sample companies were given score. Top 10 companies name were given with the individual score. The study remarks **"**There is a visible 'shift' within the Indian industry to mitigate and adapt to climate change impacts, despite lack of any regulatory requirements for GHG abatement. The positive response of Indian businesses to CDP over the last four years (CDP India project takes yearly review) is an indication of this change and their willingness to address climate change"

Jairaj[9] (2010) studied "a disclosure-based approach to climate change in India. Early lessons from business regulation". This paper argues that as a step towards improving Indian corporate response to climate change, it is worth exploring an appropriate disclosure-based regulation system. It sets out reasons why Indian companies need to improve their responses to climate change; and compares and contrasts disclosure-based regulation with other traditional models of regulation (command-and-control or market-based) in terms of their approach, strengths and weaknesses, based on its implementation in different parts of the world. The paper discusses examples of regulatory efforts on energy conservation attempted in India: the Energy Conservation disclosure regime under the Companies Act; the initial efforts at the Perform, Achieve and Trade (PAT) regime under the Energy Conservation Act and; the GHG Emission disclosure under the Carbon Disclosure Project. Through empirical analysis, the paper discusses the aims and objectives of these examples and evaluates their relative strengths and limitations. The paper concludes " -----In the present case, where corporate India needs to improve its response to the challenges posed by climate change, this paper has argued that government policy must focus on the creation of incentives and disincentives, creation of knowledge and getting corporate India to self-catalyze. However, to figure out whether government policy aimed at catalyzing industry is achievable or not, it is necessary to have information in the public arena; and this is where disclosure-based regulation holds the key."

RESEARCH METHODOLOGY

RESEARCH PROBLEM

The purpose of this paper is to report the findings of "the study on corporate carbon disclosure through sustainability report for Indian companies in the Sustainability Report for the year 2010". In the year 2010 (by cut off date 23-2-2011) 24 Indian companies made sustainability report as per GRI guidelines.

RESEARCH OBJECTIVES

The study was undertaken with two objectives namely:

1. For Indian companies which made Sustainability Report for year 2010, climate change has been a material issue?
2. If material issue, what is the carbon disclosure made by such companies?

DATA COLLECTION

For the purpose of objective 1, reports of all 24 companies were studied to know the materiality issue for disclosure by the companies. Out of 24 companies, Companies, for which climate change has been material issue were further studied to seek answer to objective 2. For objective 2, carbon content category has been used as per the guideline on 'Global Framework for Climate Risk Disclosure'[10] which incorporates two voluntary disclosures namely GRI framework and CDP (apart from third one namely financial regulatory disclosure in Security Exchange Commission not relevant in Indian context). As per GRI guidelines the carbon performance disclosure is limited to 4 measures / indicators namely EN 16, EN 17 (core indicators) and EN18 (additional indicator) and EC 2 but a broader view has been taken by including matters related to energy consumption, carbon issue in product, transportation, environmental expenditure etc which is related to climate change, in line with CDP to make the findings comparable with CDP as regards to climate change - carbon management, measurement and physical and regulatory risks. In all 35 contents were identified which includes 4 headings namely 1.Emission Disclosure, 2. Strategic Analysis & Climate Risk and Emission Management, 3. Assessing Physical Risk, and 4. Analysis of Regulatory Risks.

RESULTS OF THE STUDY

For the purpose of objective 1, reports of all 24 companies were studied to know the materiality issue for disclosure by the companies. Out of 24 companies, climate change has been material issue for 20 companies, which were further studied to seek answer to objective 2 as per the guideline on 'Global Framework for Climate Risk Disclosure' discussed above. The findings of the study are reported in Table 1.

TABLE 1: CORPORATE CARBON DISCLOSURE AS PER GUIDELINE ON 'GLOBAL FRAMEWORK FOR CLIMATE RISK DISCLOSURE' FOR SELECT INDIAN COMPANIES

Sr No.	Content Category	Maximum Score	Actual Score	Score in %	Mean Value	Standard Deviation	No of Companies reporting	% of Companies reporting
1	Emission Disclosure	100	50	50%	2.5/5	1.58	18/20	90%
2	Emission Management	460	382	83%	19.10/23	2.36	20/20	100%
3	Assessment Of Physical Risk	80	5	06%	0.25/4	0.44	4/20	20%
4	Analysis Of Regulatory Risks	60	3	05%	0.15/3	0.37	3/20	15%
	Total	700	444	63 %	22/35	-	-	-

EMISSION DISCLOSURE

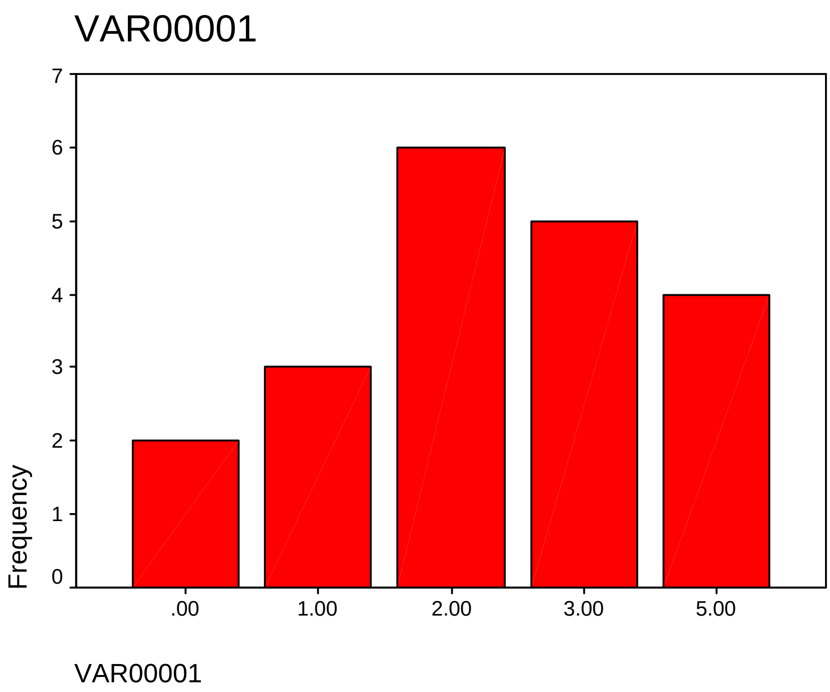
Table 2 and Figure 1 shows the frequency distribution of disclosure score of sample companies. 2 (10%) companies did not disclose anything, while 3 (15%) companies scored 1, 6 (30%) companies scored 2 and 4(20%) companies scored 5 out of 5 total score. The mean value of disclosure score is 2.5 out of maximum 5 (50%) with s.d.of 1.57.

The emission disclosure contained the questions related to measurement of carbon footprint in terms of direct and total carbon emission at present and in future. In general most of the companies reported direct and total carbon emission presently and less on carbon savings and expected future carbon emission.

TABLE 2: FREQUENCY DISTRIBUTION OF EMISSION DISCLOSURE SCORE BY SELECT INDIAN COMPANIES

Score	No of companies	%
0	2	10%
1	3	15%
2	6	30%
3	5	25%
4	0	-
5	4	20%
Total	20	100%

FIGURE 1: FREQUENCY DISTRIBUTION OF EMISSION DISCLOSURE SCORE BY SELECT INDIAN COMPANIES



EMISSION MANAGEMENT

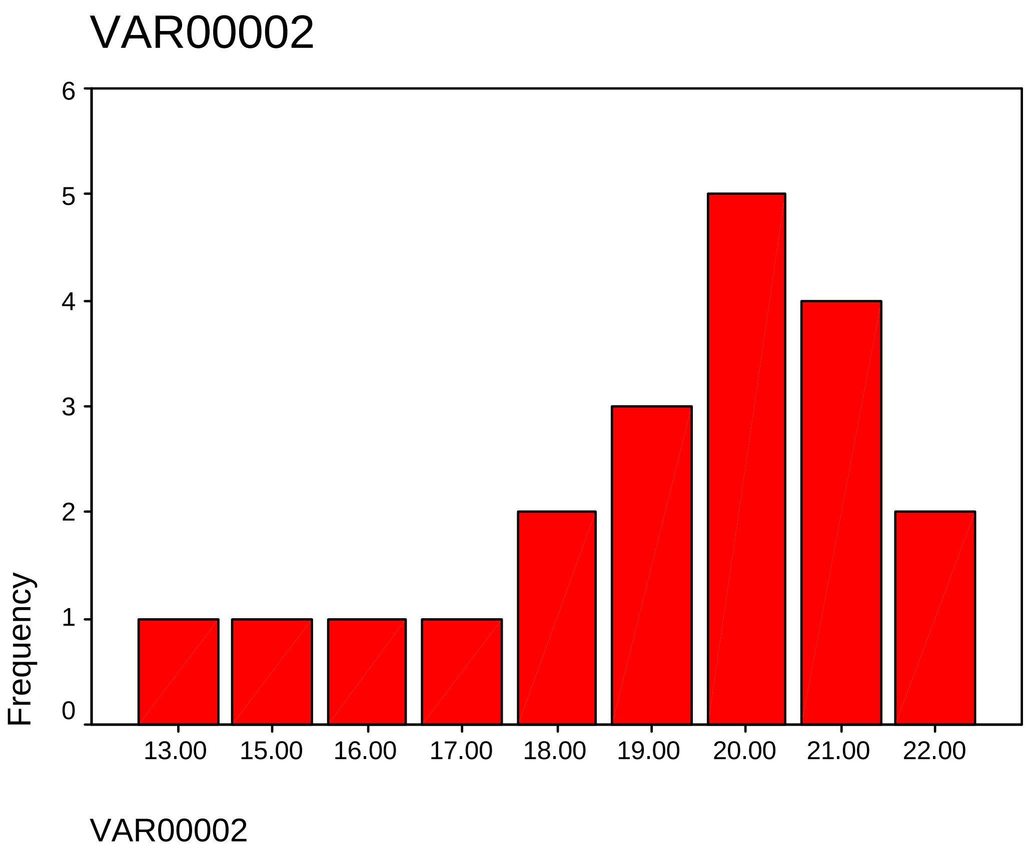
Emission management questions pertained to corporate governance and strategic management for reduction of carbon footprint and risk management. The overall score of the companies has been 83%, showing very encouraging results (mean value 19.1 out of maximum score 23, s.d. 2.36).

The frequency distribution of emission management disclosure score is shown in Table 3 and Figure 2

TABLE 3: FREQUENCY DISTRIBUTION OF EMISSION MANAGEMENT DISCLOSURE SCORE

Score	No of Companies	%
13	1	5
15	1	5
16	1	5
17	1	5
18	2	10
19	3	15
20	5	25
21	4	20
22	2	10
Total	20	100

FIGURE 2: FRQUENCY DISTRIBUTION OF EMISSION MANAGEMENT DISCLOSURE BY SELECT INDIAN COMPANIES



Out of 20 companies, 11 (55%) companies scored more than average and 9 (45%) companies less than the average. The lowest score is 13 out of 23, being 57 %. The number of years since companies are reporting their triple bottom line is different for select Indian companies with some companies doing it for the first time while some other companies reporting for fifth or sixth time. The G3 guideline encourages progressive reporting, to improve performance and disclosure every year, so the difference in disclosure is bound to happen. However, the overall the average carbon management disclosure score of 83% (minimum score being 57 %, maximum score 96 %) indicate that the result is quite encouraging so far carbon management is concerned.

ASSESSMENT OF PHYSICAL AND REGULATORY RISKS

The disclosure of physical and regulatory risks is not a regular practice for sample companies as the disclosure score indicate (table 1, Figure 3 and 4). Bearing 4 and 3 companies (with score of 5 out of 80 and 3 out of 60) which disclosed some information about their physical and regulatory risk respectively, other companies have not made any disclosure in this area. Most of the companies report that their risk management systems are in place to identify and monitor the risks but specific disclosure about the physical and regulatory risks in climate change area is not a common practice foe sample companies.

FIGURE 3: FREQUENCY DISTRUBUTION OF PHYSICAL RISK DISCLOSURE BY SELECT INDIAN COMANIES

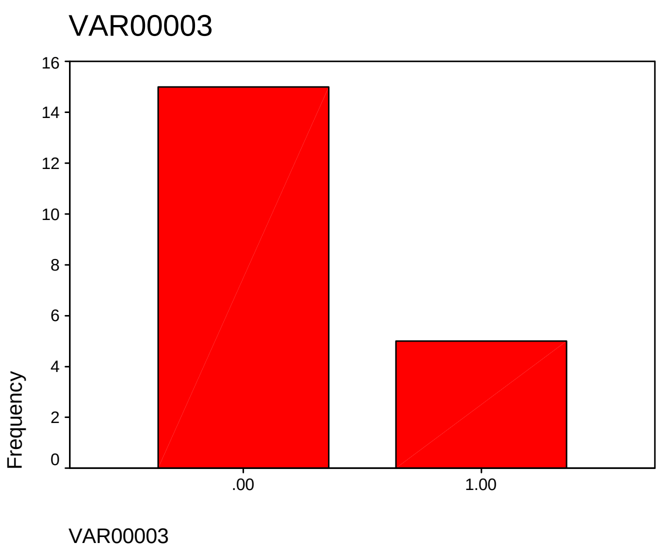
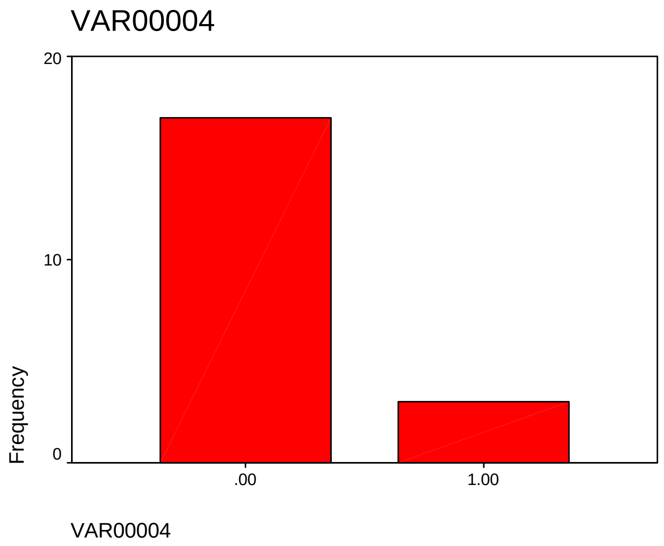


FIGURE 4: FREQUENCY DISTRUBUTION OF REGULATORY RISK DISCLOSURE BY SELECT INDIAN COMPANIES



DISCUSSION

The overall disclosure score of 63 % in four categories (with 50 % in emission disclosure, 87 % in emission management, and 0.25% and 0.15 % in physical and regulatory risk disclosure category) clearly indicate that select Indian companies, who have made sustainability report and considered climate change as material issue, are reporting in this crucial area as a part of their sustainable development.

The difference in score of individual companies is not highlighted in the study as the sustainability report is meant to encourage sustainable development in progressive manner. The varying size, nature of industry, number of years since making sustainability reporting are some the factors which influence the carbon disclosure score and are bound to be different for companies. However, the overall score especially in two categories, emission disclosure and emission management show very encouraging result.

The findings of this study are in line with other studies like CDP - India report 2010, and PWC 2009 survey.

CONCLUSION

Overall, the results of the study indicate that Sample Indian Companies have started the journey for carbon emission reduction in proactive manner and are on the right tract to align their businesses with national agenda of low carbon economy and thereby achieve sustainable development.

However, to bring quantum leap progress in carbon emission reduction by Indian Industries there is a scope to bring catalysts/and incentives. Bharath Jairaj[11] (2010) suggested "an appropriate disclosure-based regulation that has the potential to improve corporate India's response to climate challenges" Tax relief or tax concessions, additional depreciation provision on investment in Green Technology linked to carbon emission reduction, honoring companies with national level prize for achieving sizable carbon emission reduction are some of the other incentives to motivate Indian industries to achieve carbon emission reduction in defined time frame - by the year 2020 - and attain sustainable development.

REFERENCES

1. National Action Plan on Climate Change, 2008, Prime Ministers Council for Climate Change available at http://pmindia.nic.in/Climate%2520Change.doc (accessed on January 12, 2010)
2. Associated Chambers of Commerce and Industry of India, "Fewer Indian Companies fighting climate change", Climate Change Corp, 15 July 2008, available at http://www.climatechangecorp.com/content.asp?ContentID=5490 (accessed on July 20, 2010)
3. PricewaterhouseCoopers, "Indian CEOs poised to respond to climate change", PwC Briefing, November 2009, available at http://www.pwc.com/en_GX/gx/sustainability/assets/india-ceo-climate-change.pdf (accessed on July 21, 2010)
4. Carbon Disclosure Project 2010 - India 200 Report © 2010 CDP, WWF-India, and CII-ITC CESD www.cdproject.net (accessed on April 20, 2011)
5. Using the Global Framework for Climate Risk Disclosure Guide to disclosing climate risk to investors Examples of disclosure from leading corporations October 2006
6. www.gri.org
7. Ioannou and Serafeim © 2011 "The Consequences of Mandatory Corporate Sustainability Reporting" Working Paper 11-100 Harvard Business School.
8. Carbon Disclosure Project 2010 - India 200 Report © 2010 CDP, WWF-India, and CII-ITC CESD www.cdproject.net
9. Jairaj "A Disclosure-Based Approach To Climate Change In India? Early Lessons from Business Regulation" Working Paper 2010/2 (November) Centre For Policy Research Climate Initiative, India. www.cprindia.org
10. "Linking up GRI and CDP: How do the Global Reporting Initiative Reporting Guidelines match with the Carbon Disclosure Project questions?" © 2010 GRI & CDP www.globalreporting.org and www.cdproject.net
11. Jairaj op. cit.

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