

Sustainability and Climate change – Challenges for the modern Corporate

Climate change caused by rising temperatures will result in disastrous effects on the environment undermining the developmental gains made by the mankind. Some of these adverse effects are already seen in the form of severe droughts and floods, loss of land mass due to rising sea levels, disappearance of life forms which are slow to adapt to such changes and food shortages due to destruction of the food chain and natural biological cycles. These occurrences can destabilize businesses, markets and economies and thus have a major impact on Corporate performances and shareholder value. Hence responding to climate change and striving for Corporate sustainability are two major challenges that the Corporates world over will face in the future.

According to the findings of Intergovernmental Panel on Climate Change (IPCC), Global warming is caused by the increased concentration of Green Houses Gases (GHG) in the atmosphere, especially Carbon Dioxide (CO₂). Other most common GHGs are Methane,, Nitrous oxide and Chlorofluorocarbons (CFCs). There is clear scientific evidence that human activities such as burning of fossil fuel, land use change, and other man made emissions are responsible for “green house effect” which is the primary cause of global warming. As measure to counter this, Kyoto Protocol which was adopted in 1972 under United Nations Conference for Climate Change (UNFCCC), established legally binding commitments for the reduction of greenhouse gases for industrialized countries who are the highest emitters of GHG.

The risks on the Corporate entities due to climate change can be three fold. They are regulatory risks, physical risk and business risk. The regulatory risk is viewed on how well the Corporates comply with respect to national level emission reduction policies. The physical risk would be in the form of direct losses on Corporates especially due to rise in temperature and resultant natural disasters. Business risk is identified in the form of (a) legal risk where Corporates are subject to legal suits for causing environmental damage by emission of green house gasses, (b) reputational risk especially when brand loyalty gets affected due changing consumer demand influenced by their own environmental ethics and pressure groups (c) competitive risk where investments in renewable energy/ energy efficient equipment and processes and reduction and control of expenditure enabling companies to become more competitive and enhance Corporate image.

Types of Green house gasses, their global warming potential and the most common sources of emissions of these gases are given in the following table:-

Type of Greenhouse Gase (GHG)	Percentage Contribution to global warming	Global Warming Potential (GWP)	Common Sources of Emission
Carbon dioxide (CO ₂)	50	1	Fuel combustion, deforestation

Methane (CH ₄),	20	21	Rice cultivation, cattle rearing and disposal, treatment of garbage and human waste
Nitrous oxide (N ₂ O),	10	310	Fertilizer
Hydrofluorocarbons (HFCs)	15	140-11,700	Refrigerants
Perfluorocarbons (PFCs)	trace	140-11, 700	Refrigerants
Sulphur Hexafluoride (SF ₆)	trace	23,900	Electric Insulators, Heat conductors and freezing agents

Sustainability reporting and recording of carbon foot print

Corporate sustainability is the outcome of the processes which are implemented in order to reduce the negative impact and to increase the positive effects of the Corporates towards attaining a sustainable economy, environment and society.

Accounting for Corporate sustainability reflects the triple bottom line perspective which aims to integrate the economic, social and environmental aspects of business management. Through economic effectiveness, a company should strive to achieve the best possible results in the context of sustainable development by aiming to balance economic risk and return. The ecological challenge would be to increase the ecological effectiveness of business activities by environmental impacts while the social challenge would be to increase the company's social effectiveness and responsibility. This could be achieved through the implementation of programs with a high degree of social acceptance.

Climate adaptations and mitigation measures

The challenges in climate change can be met by adaptation and mitigation measures. As Climate adaptation measure Corporates can contribute and make investments in adopting good environmental and emission practices, reduce vulnerability and increase the resilience among underprivileged communities.

As a mitigation measure the first step for any Corporate or an industry would be to calculate and record its own carbon emissions, which is termed as the "Carbon Footprint". Measuring ones own Carbon Footprint enables an organization to ascertain the amount of GHG emitted by the company in producing their goods and services. This will then help a Corporate to take action to reduce such emissions. In fact some Corporates are committed to be 'Carbon Neutral' or adopt a policy of a "Zero Carbon Footprint" by negating their carbon emissions with external carbon friendly investments.

The carbon footprint is a widely accepted way to measure and describe the humanity's impact on the planet. Hence it is now becoming common for many socially responsible Corporates world over to report on sustainability aspects and publish their own Carbon Footprint.

A carbon footprint is defined as the total amount of greenhouse gases produced to directly and indirectly support human activities, usually expressed in equivalent tons of carbon dioxide (CO₂). Determining the carbon foot print involves ascertaining GHG emissions at each stage of the value chain. Once the carbon foot print is calculated a company can developed strategies to reduce the foot print and hence mitigate GHG emissions.

Although international standards for calculating carbon foot print are yet to emerge, many companies commonly adopt the standard for measuring the carbon foot print developed by Green House Gas Protocol. This protocol, which includes Corporate Accounting and Reporting standards developed by the World Business Council for Sustainable Development (WBCSD) and the World Resource Institute (WRI), identifies three scopes of emissions.

- SCOPE I - Direct Green House Gas Emissions occurring from sources that are owned or controlled by the company
- SCOPE II – GHG gasses emissions from purchase or imports of electricity, heat or steam consumed by the company.
- SCOPE III –Indirect GHG emissions, occurring from sources not owned or controlled by the company. These are activities such relating to purchase of materials; transportation of purchased fuels; and use of sold products and services, employee business travel, air travel etc.

Generally it is not difficult to calculate the GHG emissions under Scope I and Scope II, since most of companies generally have records available to facilitate this calculation. However, calculation under Scope III, which involves recording of emissions relating to the full life cycle analysis of the value chain, could be an extremely difficult task because many companies are unlikely to be maintaining records which can facilitate calculation of all the activities falling under this Scope.

Therefore, WBCSD and WRI recommend that companies report at least the first two Scopes since Scope III emission will depend on whether the company is prepared to go beyond basic compliance. Even under Scope III, it is recommended to focus on a few areas where major GHG activities are generated.

Reducing carbon foot print

The objective of recording the carbon footprint would be to measure the sources of carbon emissions and determine the amount of GHG gases emitted by the activities of a Corporate so that it will be in a position to set goals, targets and take necessary action to reduce emission of GHG.

There are two approaches available for companies to reduce the carbon footprint. Firstly, the companies need to reduce the carbon footprint of internal operations. Examples of in-house reductions are

- Reducing power consumption through energy saving strategies
- Introducing/ improving energy efficiency processes.
- Reducing unnecessary travel especially air travel (e.g. encouraging video conferencing, car pooling, cycling and walking where practical).
- Making buildings more energy efficient
- Shorter but more effective working hours
- Reduction of waste

In addition to in-house reductions Corporates can also look at investing in projects that would absorb CO₂ such as developing forests in another part of the country or in another country to offset equivalent amounts of GHG emissions. Complement of such strategies enables a Corporate to neutralize its own carbon emissions and hence move towards adopting a zero carbon policy.

Direct Benefits of reducing carbon foot print

Some of the direct benefits a company would gain by reducing carbon footprint and sustainability reporting are:-

- Positive Corporate image – Enables a Corporate to build its image as a socially responsible entity
- Meeting regulatory requirements- Under the Kyoto protocol high carbon emitting countries are required to reduce their emissions during the period 2008 to 2012. Accordingly the main industries which are responsible for high emissions are required to reduce their emission during this period.
- Reduction of costs- Emission reduction compels companies to become more energy efficient, introduce process efficiencies, reduce waste, etc which eventually leads to cost savings.
- Cost effectiveness in the long run- Although initial investments in emission reduction resources and equipments such as renewable energy are high, over long term, the cost savings generated will yield financial returns that would justify such investments.
- Earnings from Carbon credits- Reduction of GHG emissions, gives the opportunity for Companies in developing countries to earn foreign exchange revenues through sale of Carbon Credits.

- Improve sustainability- Improving GHG emission will lead to better utilization of resources especially energy related resources. Further the investments in renewable energy sector will reduce environmental degrading and thus lead to improvements in sustainability.
- Meeting sustainability accounting standards –Although environmental accounting standards are yet to be developed companies can start adopting such practices that will enhance shareholder value.

Conclusion

As the adverse impact of global warming does not recognize any man made boundaries, every country, every organization and every individual has the responsibility and obligation to contribute to the process of reducing global warming. This can only be achieved by reducing the emission of Green house gasses – transforming ourselves for living in a ‘low carbon society’. This, however, requires commitment and effort, most of which is voluntary, by every individual and every institution across countries. Sustainability accounting and adopting of climate mitigating and adaptation measures, will enable corporates to contribute to the global and national efforts of reducing global warming and project the image of a responsible global citizen while accruing productive gains over long term.