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SQ

raising the Sustainability Quotient



Editorial

Climate Change & Sustainability

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This issue of SQ is timed at the meeting of Committee of Parties (COP). In the first week of December, more than 190 countries gathered in Paris for a two-week annual climate change conference that is expected to reach a global agreement. This meeting is crucial for India as well as for the World.

India has decided not to agree to any proposal that will seek to restrict the use of coal as a source of energy in the near term. While India has embarked on an ambitious renewable energy pathway, coal is likely to remain its primary source of energy for the next couple of decades at least. In a recent projection, the Government has proposed to bring down its dependence on coal for electricity production from the current 61% to 57% by 2031-32. By that year, the contribution of renewable energy — solar, wind and biogas — in the total electricity generation is projected to grow to 29% from the current 12%.

While India is poised to step up generation from renewable sources of energy, efforts are needed to reduce the

energy demand and improve energy efficiency while providing wider energy access. This is going to be a challenging task and the business will have an important role to play.

In this issue of SQ, we present articles from some of the industry leaders and research institutions who highlight the need for reducing energy demand by design and following principles of low carbon growth. Articles on climate change and sustainability (focusing on Carbon disclosure) and integration of climate change for climate change adaptation in the CSR, present a strategic approach that the business could consider.

It may be worth to read the report¹ submitted by Government of India (GoI) on Intended Nationally Determined Contributions (INDCs). This report presents actions that the GoI is committing on a voluntary basis to reduce the GHG emissions. This report in many ways provides a road map and strategy for business in India to follow.

- Prasad Modak

¹See <http://www4.unfccc.int/submissions/indc/Submission%20Pages/submissions.aspx>

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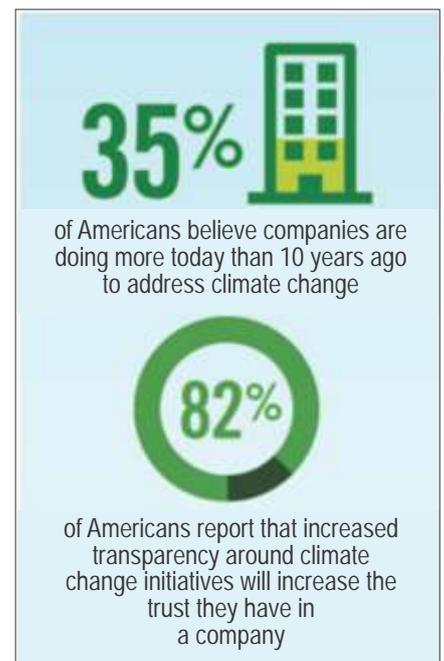
Knowledge

The Climate Change Agenda in Sustainability

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Sustainability is no longer looked at as a reputation management tool. Not anymore is it about facilitating compliance with environmental standards and safeguarding natural resources. Companies today integrate sustainability principles into their businesses to achieve defined goals like energy & water saving, supply chain greening, employee engagements, customer health and safety, etc. Sustainability, thus, is looked at as a value creation tool making positive contributions to the overall goal of the business. Financial performance of a business is not the only parameter for companies to demonstrate their viability and success. Instead the stakeholders today demand a more rounded performance enveloping environmental and social performances along with the economic performances. Such an approach, also called the Triple Bottom Line (TBL) performance helps companies to perform more holistically, prioritizing people and the planet, while also promoting profits. Progressive companies, having realised this demand, are using sustainability elements as essentials of business strategy for meeting the TBL expectations.

The framework that gives the companies an understanding of their TBL impacts is sustainability reporting. The Global Reporting Initiative (GRI) provides such a framework (the fourth generation G4 guidelines are in use at present) which has emerged as the most widely used internationally accepted structure for



Source: Research conducted by Research-Data Insights, Hill+knowlton Strategies, and Environmental Defense Fund (DDF).
(Infographic credit: Hill+knowlton Strategies)

reporting sustainability. While the GRI-G4 continue to remain voluntary, the regulatory regime in India put forth the need for companies to respond to sustainability concerns as per the National Voluntary Guidelines on Social, Environmental and Economic Responsibilities of Business (NVGs). This was communicated through a circular from Securities and Exchange Board of India (SEBI), in August 2012, on Business Responsibility Reporting (BRR) for the 100 largest listed entities in India.

Amongst the various sustainability elements very keenly pursued by businesses, those related to climate change are considered vital. GRI-G4 explicitly requires identification of financial implications and other risks and opportunities related to the organization's activities due to climate change and requires quantification and reporting of GHG emissions. The BRR is expected to report on the strategies / initiatives to address climate change and global warming. Companies focusing on addressing climate change perspectives with a long term horizon, get the dual benefit of risk mitigation as well as business value addition besides, of course, demonstrating sustainability.

Companies in general, too, have started realising the benefit of accounting for GHG emissions and set targets for GHG emission reductions. The growing response to the Carbon Disclosure Project (CDP) year on year is a proof for this. This growing interest in driving sustainability through the Climate Change route is also in line with the Government of India's (GoI) low carbon growth agenda. India declared a

voluntary goal of reducing the emissions intensity of its GDP by 33–35%, over 2005 levels, by 2030² as one of its Intended Nationally Determined Contributions (INDCs). Stating explicitly the criticality of energy for India's sustainable growth, the GoI is promoting use of renewable energy and shifting towards efficient technologies for coal based plants on the supply side. On the demand side a number of schemes to promote energy conservation and energy efficiency are being incorporated to reduce energy demand. This scenario brings about interesting propositions for companies to pursue the stated goals of sustainability through the climate change mitigation route.

Companies reporting sustainability using the KPIs (Key Performance Indicators), related to climate change, provide stakeholders the possibility to benchmark performance and assess progress over a period of time. In the Sustainability Report of ITC Limited³, one of the first highlights provided is about being carbon positive for 10 consecutive years. This is further qualified in the report through its approach on enhancing energy efficiency and conservation as well as investments in cleaner and renewable energy sources. The sequestration advantage through its plantations provides for the carbon positive situation for the company.

To demonstrate their commitments to be climate sensitive, companies reporting sustainability have spelled out measurable targets for the reduction of GHG emissions. Many of the companies are using the disclosure platform of

Carbon Disclosure Project (CDP), which is holding the largest database of primary corporate climate change information in the world. Jubilant Life Sciences Limited (JLSL), for example, is targeting reduction, by 12%, of its specific GHG emissions over the baseline year of 2012-13⁴ and has voluntarily chosen to disclose though it is not part of the CDP 200. CDP invites 200 Indian companies to respond based on the Bombay Stock Exchange (BSE) 200 index.

For combating Climate Change, cleaner technologies are considered as essentials. Since technology is the source of GHG emissions, cleaner technologies are needed to combat the rising GHG levels in the atmosphere. Achieving the global reduction of GHGs requires innovation to transform current technologies into cleaner and climate-resilient technologies. Companies reporting sustainability have realised this fact and have been innovating, either in the technologies they use or through the development of products that are more climate sensitive. Investing in technology transfers is also looked at by these progressive companies. Maruti Suzuki India Ltd. showcased its efforts at reducing the GHG emissions of its products in their sustainability report⁵. Improvement of the fuel efficiency of its vehicle as well as its collaboration in the joint programme of Government of India and Society of Indian Automobile Manufacturers (SIAM) to promote hybrid and electric vehicles in India have been highlighted.

² India's Intended Nationally Determined Contribution (INDC): working towards climate justice; <http://www4.unfccc.int/submissions/INDC/Published%20Documents/India/1/INDIA%20INDC%20TO%20UNFCCC.pdf>

³ Sustainability Report 2015, ITC Ltd. <http://www.itcportal.com/sustainability/sustainability-report-2015/sustainability-report-2015.pdf>

⁴ Jubilant Lifesciences, Waves of Change, Sustainability Report 2014-15; http://www.jubl.com/uploads/downloads/93down_jll_sustainability_report_2014-15.pdf

⁵ Sustainability Journey – Making it Matter; Sustainability Report 2013-14; https://marutistoragenew.blob.core.windows.net/msilintiwebpdf/MARUTI_SUSTANIBILITY_REPORT_2014.pdf

Strategies to adopt low carbon growth and carbon neutrality have also been considered by the companies in their path of demonstrating sustainability. Wipro Ltd., in their sustainability report⁶ reports meeting about 22% of its total office energy consumption through renewables. This is stated to be a six times increase from the base year of 2009-10. ITC Ltd. has chosen to go beyond carbon neutrality and is enlarging its positive carbon footprint. Enhanced usage of renewable energy and increased carbon sequestration by expanding forestry projects in wastelands are two remarkable features of ITC's positive carbon footprint. More than 43% of the company's total energy consumption is from renewable sources. Over 193,072 hectares of plantations, many of which are in degradable wastelands, are under its social and farm forestry initiatives.

While the Indian companies, through measures oriented towards climate change impacts are bringing value to their businesses and also contributing to the Gol's stated objectives towards combating climate change, they also are addressing business risks. This is evident in the CDP responses⁷ as well. Almost half of the reporting organizations anticipate stringent regulatory framework addressing climate change impact to be enforced within the next three years, which, they foresee, will impact their operational costs. The Gol's action of taxing fossil fuel consumption is an example in this direction. This is a *de facto* carbon tax on petroleum products and coal. The excise duty hike on both petrol and diesel and stoppage of subsidy in 2014 and the increase in coal cess in 2015 are examples of the carbon tax

which can push industries to reduce the use of fuel, produce goods more efficiently or shift to cleaner fuels by making the latter more competitive. India has already introduced market mechanisms including Perform Achieve and Trade (PAT) and Renewable Energy Certificates (REC). All these developments necessitate Indian companies to be proactive in their approach to addressing climate change concerns.

The various Gol policies to promote renewable energy also open up newer horizons for companies to look at renewable energy opportunities for their businesses. Renewable installations and renewable energy purchases are possible as part of the company's energy strategy focused on their Climate Change mitigation objectives and supported by the Gol policies. The regulatory regime of Renewable Purchase Obligation (RPO) is being used by companies who do not want to invest in renewable generation technologies. Organizations like Ambuja

Cements and Wipro have been increasingly deploying renewable energy for their businesses but the approaches are different. While Ambuja Cements has established 7.5 MW capacity wind power, 330 KV solar plant and was installing a 6.5 MW waste heat recovery based power generation system⁸, Wipro met 15% of its power needs from renewable PPA (power purchase agreements) in the order of 65.6 million units (KwH) for 5 key locations in India in 2014-15.

The case for company's action on climate change has never been stronger and better understood. The growing international political momentum to address the climate change risk is opening newer horizons for companies. It is evident that for companies pursuing sustainability goals, addressing climate change is bringing in the TBL advantage. The only prerequisite is to aggressively pursue the climate change agenda for their businesses and continuously adapting to the changing policies.

Item	Description
Carbon Tax	Carbon Tax is a financial mechanism that pushes industries to reduce the use of fossil fuel, produce goods more efficiently or shift to cleaner fuels.
Perform Achieve and Trade (PAT)	PAT is an innovative market based trading scheme initiated by Government of India in 2008, under its National Mission on Enhanced Energy Efficiency (NMEEE) in National Action Plan on Climate Change (NAPCC). It aims to improve energy efficiency in industries by trading in energy efficiency certificates in energy intensive sectors.
Renewable Purchase Obligation (RPO)	Under the Electricity Act 2003 (EA 2003), the State Electricity Regulatory Commission (SERC) set targets for distribution companies to purchase certain percentage of their total power requirement from renewable energy sources. This target is termed as Renewable Purchase Obligation (RPO).
Renewable Energy Certificates (REC)	Renewable Energy Certificate (REC) mechanism is a market-based instrument to promote renewable energy and facilitate renewable energy purchase obligations amongst various stakeholders.

⁶ Wipro Sustainability Report 2013-14; <http://www.wiprosustainabilityreport.com/sites/all/themes/wiprosustain/pdfs/Wipro-sustainability-report-2013-14.pdf>

⁷ CDP Climate Change Report 2015, India Edition; CDP Report 2015 November 2015

⁸ Sustainable Development Report 2014; <http://www.ambujacement.com/sustainability/report2014/carbon.html>

Driving National Climate Actions, by Choice: India GHG Program - An industry led leadership platform for driving Low Carbon Growth

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Internationally, the movement for sustainable business practices and carbon neutrality has gained steady momentum. This has led to the development of a plethora of tools and methodologies to achieve low-carbon development. In India, the challenge arises not in replicating these positives trends but in adapting it to suit the Indian scenario.

India's 12th Five Year Plan in addition to the National Action Plan on Climate Change, and the Planning Commission's report on Low Carbon Strategies for Inclusive Growth, opened up an opportunity to act on creating an industry wide system for emissions accounting and management. The India GHG Program was launched to do just that.

Since its conception in 2013, the India GHG Program⁹ has acted as a 'Centre for Excellence' combining the expertise and recognition provided by three organizations, World Resource Institute (WRI) India, The Energy and Resources Institute (TERI) and Confederation of Indian Industry (CII). These organizations have come together to provide a platform where it is possible to engage with peers and experts on how to improve organizational resilience and profitability, as climate change threats to the bottom line become more evident.

The call to climate action is stronger than ever before. Many national governments,

businesses, and civil society, are actively working at the international, national and sub-national levels to adopt a low-carbon growth pathways. The India GHG Program is attempting to help Indian business adopt this trajectory, by assisting companies to measure and manage their GHG emissions. Being a voluntary programme, member companies determine their own emission targets and timelines based on company specific data.

The vision of the programme is to create a culture of GHG inventorization and benchmarking within the nation based entirely on India-specific data and collected using a multi-stakeholder process. The end goal is to have businesses in India follow a standardised methodology for emission reductions.

As of today, the program's 40 plus members¹⁰ have a collective market cap in the range of USD 112 billion and manage a compiled GHG inventory ranging from 350 to 360tCO₂e.

Key Programme Elements

The programme's 4 pillars - institutional capacity building; internationally recognized and

locally relevant GHG measurement and accounting tools; peer engagement; industry-specific benchmarking and best practices and policy engagement make it a key center of excellence on GHG management. Underlining all of these is the voluntary nature of the programme which affords its members many flexibilities.

Despite the lack of a regulatory mandate, the member companies have shown ambitious levels of commitment, accountability and transparency in their engagement with the programme. In return the program ensures complete support for its members via its tools and expertise available through different mediums throughout the process of inventorying emissions, analysing data, setting targets and achieving them.



⁹ To know more about India GHG program, visit <http://indiaghgp.org/>

¹⁰ To know more about the members, visit the link <http://indiaghgp.org/list-members>

Tools and How to Use Them

The program's Do-It-Yourself GHG Accounting tool¹¹ is a stellar example of this, available on the official website - the tool helps corporate leaders in decision making and emissions reporting. Members can also find resources suitable to their needs. The program strives to customize the international tools¹² for the Indian context through a working group set up for different sectors.

In addition, at its recent Annual Summit-India Business and Climate Summit, 2015, it launched two India specific tools. The first was the Emission Factors for Road, Rail and Air¹³, the need for which was felt strongly since international

essential that there is data on where and how it is possible to mitigate and manage these emissions in order to effectively minimize them.

Other than making available easy to use tools, the program has trained more than 300 individuals through cluster trainings and in plant workshops across cities and has bought to the Indian audience international expertise via its webinars. Currently the program is conducting working group meetings with various stakeholders from the heavy engineering and building sector to gauge what are the needs of the sector, in order to develop a roadmap for the sector. It is also beginning dialogues with stakeholders in the textile and chemical industries to

portion of the publication is also devoted to information on the policies related to climate-international and domestic vis-a-vis emission reductions. Conversations have been taking place, with stakeholders in other sectors as well about creating similar case studies. Business leaders feel strongly, that sharing achievements would incentivise scaling up of sustainability projects, as well as help newer entrants to see the benefits of engaging with emission reductions.

Addressing the National Discourse

Though working with organizations is integral to the program, it aims to create a culture of GHG accounting, necessitating the need to involve themselves with policy makers. With Indian businesses taking their cue from government regulations, businesses wish for guiding frameworks to come from policy.

Beginning with 28 founding member companies, some of which are - ITC Limited, ACC Limited, Infosys, Yes Bank Limited, Ambuja Cements Limited, HCC, Bangalore Int. Airport Limited, Delhi Int. Airport Limited Jet Airways (India) Limited, NTPC Limited Godrej & Boyce Manufacturing Company Limited etc.; the programme has progressively added more industry giants to its list of member companies. However the endeavour is to keep make this list exhaustive. The programme is, at its core, a multi-stakeholder program which wishes to work with more and more organisations, an absolute necessity to build a more distinct and appropriate knowledge base and to develop accurate inventories and tools.

The program looks forward to join hands with more knowledge partners and member companies to build an industry wide, industry led pathway to low carbon development.



values were skewing emissions estimation by at-least 20-30 percent. This prevented accuracy in the findings on-ground.

The other tool was customized India specific Power Sector Tool¹⁴, which helps estimate emissions from power plants. Energy generation and consumption are the biggest contributors to the total GHG emissions. Hence, it is absolutely

gather an understanding of their needs. Recognising Achievements and Building Strengths

In association with Delhi International Airport Limited and Jet Airways, the program published a best practices road map for the Indian aviation sector. This publication would help build awareness within the sector, of the opportunities and incentives available to them. A

¹¹ <http://indiaghgp.org/do-it-yourself-ghg-accounting-tool>

¹² <http://indiaghgp.org/sectoral-toolsets>

¹³ <http://indiaghgp.org/transport-emission-factors>

¹⁴ <http://indiaghgp.org/power-sector-tool>

ITC's Holistic Approach for Addressing Climate Change Risks

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It is today an established fact that the issue of climate change and global warming is not a spectre of the distant future, but a clear and present danger that needs to be addressed on a war footing. According to the World Economic Forum (WEF) Report on Global Risks 2015, the evolving risk landscape indicates a shift over the past few years from economic risks to environmental risks, which will be hugely impacted by climate change. The challenges related to environment and ecosystems especially due to climate change are complex, long-term and inter-related, especially in terms of its impact on water and availability of other natural resources. This in turn has wide-ranging implications on ITC and its stakeholders, including agricultural communities, who are especially vulnerable to the adverse fallout of climate change.

To address these daunting challenges, ITC has focused on not only integrating environmental best practices into its operations but also initiatives that lead to natural resource replenishment. For the last two decades, the Company has made concerted efforts to maximise efficiencies of natural resource usage across its businesses, including logistic network optimisation for its FMCG products, together with large scale interventions directed at natural resources replenishment, including Social & Farm Forestry, Integrated Watershed Development and Sustainable Agriculture Practices programmes. Consequently these programs address the consequences of climate change through mitigation as well as adaptation.

ITC has consciously pursued a low carbon growth strategy by focusing on reducing specific energy consumption, increasing the use of energy from renewable sources and enhancing carbon sequestration through large-scale afforestation. As a result of these concerted efforts, more than 43% of energy consumed by ITC's operations during 2014-15 was from renewable sources and carbon neutral sources such as biomass, wind and solar. The Company intends to scale up initiatives to reduce dependence on energy from fossil fuels by progressively moving towards meeting 50% of its total energy requirements from renewable sources by 2020.

ITC's renewable energy portfolio comprises of a number of sources. These include black liquor waste from pulping process and waste wood biomass from chipping operations in the Bhadrachalam Unit of ITC's Paperboards & Specialty Papers Business; locally sourced

chip/sawdust and de-oiled bran in the Kovai Unit; and Wind Energy farms for ITC's Packaging & Printing, Cigarettes, Leaf Threshing, Hotels and Paperboards & Specialty Papers Businesses. ITC has made large-scale investments in wind energy, with a total installed capacity of 132.25 Megawatts (MW).

The investments in wind energy include a 7.5 MW wind energy farm in Coimbatore that provides energy to the Paperboards and Specialty Papers unit at Kovai and a 14.1 MW wind energy farm set up in 2008 in Tamil Nadu, which provides clean energy to ITC's Packaging & Printing unit at Chennai. In addition, a wind energy farm of 8.75 MW provides clean energy to ITC's Green Leaf Threshing (GLT) Unit in Mysuru. ITC's GLT Units at Chirala and Anaparti have also been using energy generated by a wind farm set up in Anantapur, Andhra Pradesh. With this, all three GLTs Units of ITC meet a significant portion of their energy needs from renewable sources.



Renewable sources today provide for more than 90% of the energy requirements of ITC's 32 acre Infotech Park in Bengaluru. In addition, over 50% of the electrical energy requirements of ITC Hotels Division are sourced from wind farms. ITC hotels that draw the bulk of their energy requirements from renewable sources include ITC Windsor and ITC Gardenia in Bengaluru, ITC Grand Chola in Chennai, ITC Maratha in Mumbai and ITC Rajputana in Jaipur. The ITC Hotels division pioneered the concept of 'Responsible Luxury' through design interventions, which have enabled optimisation in the usage of energy and water. The LEED® Platinum certification for all the luxury hotels of the Company makes 'ITC Hotels' the greenest luxury hotel chain in the world. ITC hotels are thus not only energy efficient by design but also conserve fossil fuels by maximizing wind energy usage.

Assessment) rating, the national rating for green buildings in India. Large infrastructure investments, such as the ITC Green Centre at Manesar (LEED® Platinum certified) and the upcoming ITC Green Centre at Bengaluru (pre-certified for LEED® Platinum) continue to demonstrate ITC's commitment to green buildings.

Several of the Company's factories and office complexes have also received the LEED® certification and Bureau of Energy Efficiency's (BEE) star ratings. In order to continually reduce the Company's environmental footprint, green features are integrated in all new constructions and are also being incorporated into existing hotels, manufacturing units, warehouses and office complexes during retrofits.

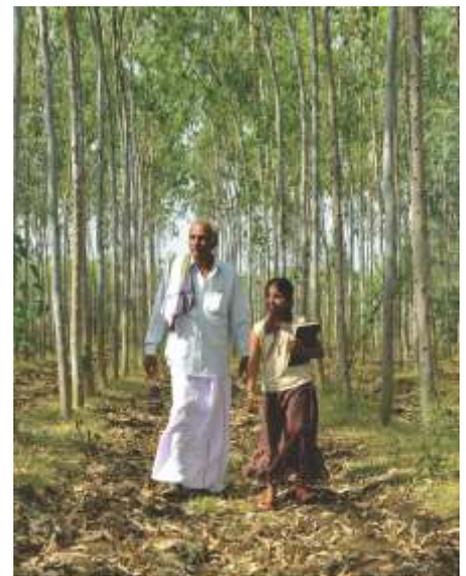
These efforts are further complemented by the Company's afforestation

location-specific and disease-resistant clonal stock with shorter harvesting cycles – 4 years against 7 for standard saplings.

ITC's Social & Farm Forestry Programme has today greened more than 2,00,000 hectares and generated over 90 million person days of employment to date. Regenerating green cover on this scale relieves pressure on public forests, improves moisture conservation and groundwater recharge, and considerably reduces erosion. These initiatives have not only sought to address the harsh realities of climate change by mitigating the impact of increasing levels of GHG emissions in the atmosphere, but have also ensured that ITC sequesters close to twice the carbon emitted through its operations, thereby helping maintain ITC's Carbon Positive Status for a decade now.



ITC Grand Chola, Chennai, India



ITC has also spearheaded the 'green building' movement in India. This commenced with the establishment of the ITC Green Centre at Gurgaon in 2004 – the highest LEED® Platinum certified building in the world. ITC Grand Chola, the 600-key super-premium luxury hotel complex in Chennai, which is the world's largest LEED® Platinum certified green hotel, has also secured a 5 Star GRIHA (Green Rating for Integrated Habitat

programme, which is part of its large-scale CSR/Social investments initiative. ITC's Social & Farm Forestry Programme enhances the fertility of degraded wasteland to enable renewable plantations and provide a source of regular income to small & marginal landholders. To ensure the commercial viability of these plantations, ITC had invested in extensive research and development to develop high-yielding,

Furthermore, for continuous improvement on environmental performance, during 2014-15 ITC's Businesses have set voluntary targets in terms of specific energy reduction, specific water intake reduction, specific waste generation, etc. An organisation-wide integrated sustainability data management system supplemented by standard operating procedures for measurement and recording provides

the platform to monitor the performance of each business on resource utilization and environmental impact vis-a-vis production.

ITC has also implemented large-scale programmes to address the challenges faced by rural agricultural communities who are especially vulnerable to the effects of climate change. The Company helps address these concerns through a mosaic of solutions that include natural resource augmentation as well as the enabling of farming communities to

adopt scientific agricultural practices. ITC's large-scale Integrated Watershed Development Programme is a vital part of its sustainability strategy to help combat the impact of climate change on rural communities. The Programme promotes local management of water resources by facilitating community-based participation in planning and executing watershed projects. The total watershed area covered under soil & moisture conservation is over 2,20,000 hectares, benefiting over 1,70,000 households. In addition, ITC's Improved Agricultural

Practices Programme provides a wide spectrum of extension services to impart knowledge and knowhow to farmers through a range of farm extension services. These include technical training, both classroom and on-site, consultation and supervision, soil testing, balanced fertilisation, foundation seeds and seed treatment as well as water, weed, pest and post-harvest management. It also propagates best farm practices through initiatives like the Farmer Field Schools, Demonstration Farms and dedicated farmer training programmes. In addition, access to quality inputs and sharing the fruits of research of agricultural institutions enable higher farm productivity.



These focussed efforts have led ITC to achieve the distinctions of being Carbon Positive for the last 10 years, Water Positive for 13 years in a row, Solid Waste Recycling Positive for the last 8 years, besides generating sustainable livelihoods of around 6 million people, many of whom belong to the disadvantaged sections of society.



Source: <http://www.chrismadden.co.uk/cartoon-gallery/category/environment/climate-change-cartoons/>



Source: <http://zacharyshahan.com/3-global-warming-cartoons-worth-your-contemplation>

Adapting to Climate Change in CSR

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Climate Change – An Issue

Climate change is recognized as a significant manmade global environmental challenge. It has concluded that the impact of human activities on climate is unequivocal. The debate at this point is on the extent and magnitude of climate change¹⁵.

Climate change is expected to hit the developing countries the hardest. Its effects—higher temperature, changes in precipitation pattern, rising sea levels, and more frequent weather-related disasters—pose risk for agriculture, food, and water supplies. At stake are recent gains in the fight against poverty, hunger and disease, and the lives and livelihoods of billions of people in developing countries¹⁶. The rural areas of the developing nations are at the most risk. More than 3 billion people live in the rural areas of developing countries¹⁷. Rural households tend to rely heavily on climate-sensitive resources such as local water supplies and agricultural land; climate-sensitive activities such as arable farming and livestock husbandry; and natural resources such as fuelwood and wild herbs. Climate change can reduce the availability of these local natural resources, limiting the options for rural households that depend on natural resources for consumption or trade¹⁸.

Most industrialised countries have committed to the UNFCCC and the Kyoto Protocol, to mitigate the climate change by reducing their GHG gases. According to Working Group I and Working Group III of Assessment Report 4 of

Intergovernmental Panel on Climate Change (IPCC), current commitments would not lead to a stabilisation of atmospheric GHG gases. Due to the lag times in the global climate system, no mitigation effort, will prevent climate change from happening in the next few decades. Therefore, 'Adaptation' to climate change is unavoidable. However, without mitigation, magnitude of climate change is likely to be reached that makes adaptation impossible with the increase in economic costs¹⁹.

Cost of Adaptation

As climate change becomes more severe than originally projected, estimated adaptation finance needs for developing countries are doubling or tripling every few years. There's still a huge gap between how much adaptation finance we have and how much we need. The most recent estimates show that the developing world will require \$140 to \$300 billion a year by 2050 to adapt to climate change. Taking the most recent commitments for adaptation in 2013 and the lowest estimated needs by 2050, adaptation finance will need to increase by 438 percent by 2050²⁰. Mobilizing additional finance for adaptation is one of the most pressing challenges for developing countries; delaying action will mean even higher costs.

Climate Change Adaptation as CSR

Given such facts, private sector has an important role to play in combating climate change. Climate Change adaptation can be taken as CSR by the companies. Such CSR activity will benefit

the communities in which the company operate, by reducing their risk to climate change and will also ensure business resilience. Companies can undertake community climate change adaptation initiatives in order to differentiate their CSR programmes and gain a brand and reputational advantage.

In India, the concept of CSR is governed by clause 135 of the Companies Act, 2013. The Act encourages companies to spend at least 2% of their average net profit in the previous three years on CSR activities. The Act also lists out a set of activities that a company can undertake and is eligible under CSR²¹. (Box 1)

BOX1 - LIST OF ACTIVITIES ELIGIBLE UNDER CSR

- The list of activities eligible under CSR:
- Promotion of Education
 - Eradication of extreme hunger and poverty
 - Gender equity and women empowerment
 - Reducing child mortality and improving maternal health
 - Combating HIV-AIDS, malaria and other diseases
 - Environmental Sustainability
 - Social business project
 - Employment enhancing vocational skills
 - Contribution to Prime Minister's relief fund and other such state and central funds
 - And such other matters as may be prescribed

¹⁵ https://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf

¹⁶ <http://environment-ecology.com/climate-change/135-climate-change-a-the-world-bank.html>

¹⁷ <http://www.ifad.org/climate/factsheet/e.pdf>

¹⁸ <http://www.prb.org/Publications/Articles/2007/ClimateChangeinRuralAreas.aspx>

¹⁹ <https://www.ipcc-wg2.gov/AR4/website/18.pdf>

²⁰ <http://www.wri.org/blog/2015/04/costs-climate-adaptation-explained-4-infographics>

²¹ <https://www.pwc.in/assets/pdfs/publications/2013/handbook-on-corporate-social-responsibility-in-india.pdf>

Climate change adaptation activities for the community can fit under the head of 'Environmental Sustainability Activity' listed under the Act. For planning the adaptation strategies, first the vulnerability needs to be identified. Number of methods can be used to access vulnerabilities due to climate change. Some of the methods are Livelihood Vulnerability Index (LVI), Social Vulnerability Index (SVI), Vulnerability Capacity Index (VCI), Hazard Risk and Vulnerability Assessment (HRVA). After assessing the vulnerability, relevant adaptation strategies can be planned.

A case of a company has been illustrated that undertook climate change adaptation as a CSR activity. Following process can be adopted to strategize the location and the kind of CSR activities to be planned for each location depending on the vulnerability of the place.

A CASE²² FOR ILLUSTRATING ADAPTATION PLANNING

AB Farm Products Pvt. Ltd. (ABFP)²³ is one of the leading companies in the sector of Agricultural products in the arid region of India. The company is dependent on agricultural produced from the neighbouring villages. The villages on which the company is dependent are Thol, Chekla, Shiyawada, Kanij and Vasnamargiya.

The region is facing the impacts due to Climate Change. The last decade (2004-2014) was the driest in the last 50 years for the region. The disturbance in rainfall pattern has resulted in reduced number of rainy days. Water availability in the region is now a growing concern with the river running dry during the non-monsoon season. The Ground water table too has observed a significant decline. The farmers of the villages were facing extreme shortage of water. The crop production of the village farms decreased. The company also faced great losses due to decreased supply of crops

from the village farms and in turn affected Company's turnover to a great extent. The company decided to carry out vulnerability assessment of the villages on which it is depending to estimate the impacts of climate change on communities and on agriculture for identifying the appropriate adaptation strategies for the villages. The company used 'Livelihood Vulnerability Index' (LVI) method for vulnerability assessment of the villages.

The LVI uses multiple indicators to assess exposure to natural disasters and climate variability, social and economic characteristics of households that affect their adaptive capacity, and current health, food, and water resource characteristics that determine their sensitivity to climate change impacts. The LVI includes profiles such as Socio-Demographic Profile (SD), Livelihood Profile (L), Health (H), Food profile (F), Water profile (W), Agriculture profile (A) and Infrastructure profile (I). Each profile is comprised of several indicators (refer).

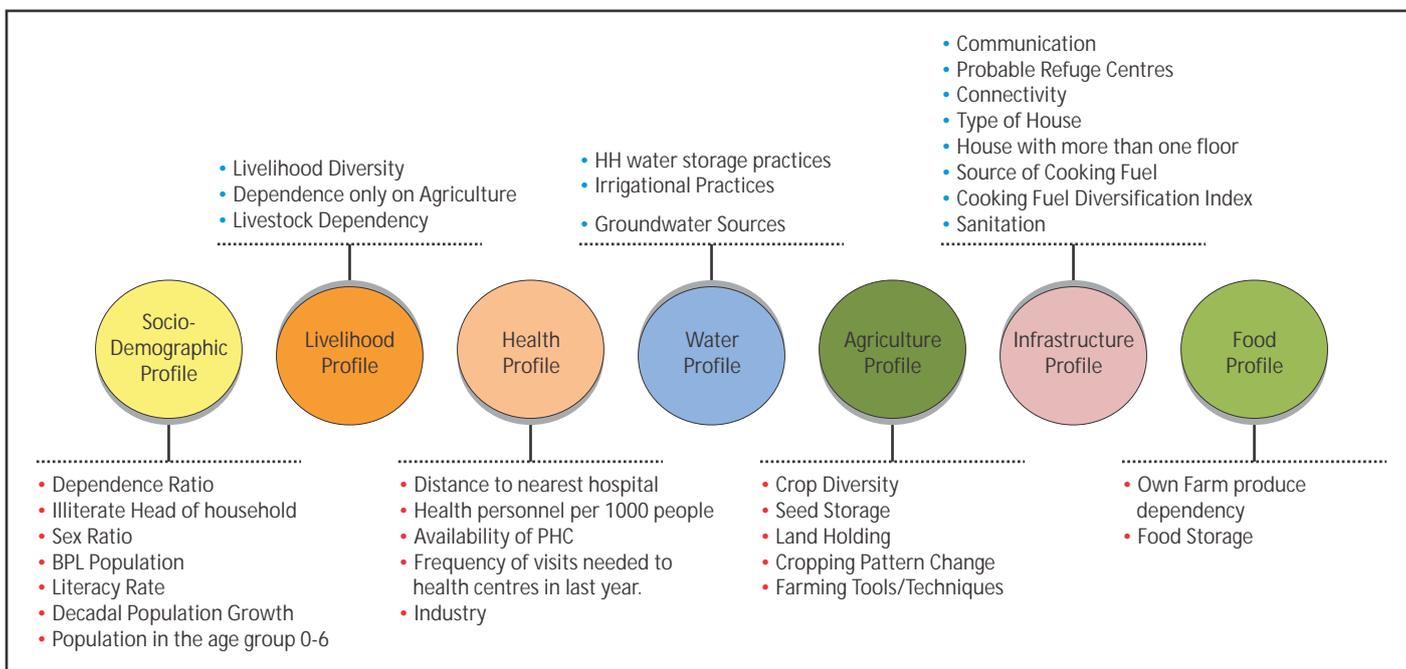


Figure - Indicators under Major Profiles

²² This case is an illustration and has been modified to explain the process of strategizing and action planning (CSR activities) for adaptation to climate change.

²³ The name of the company is hypothetical.

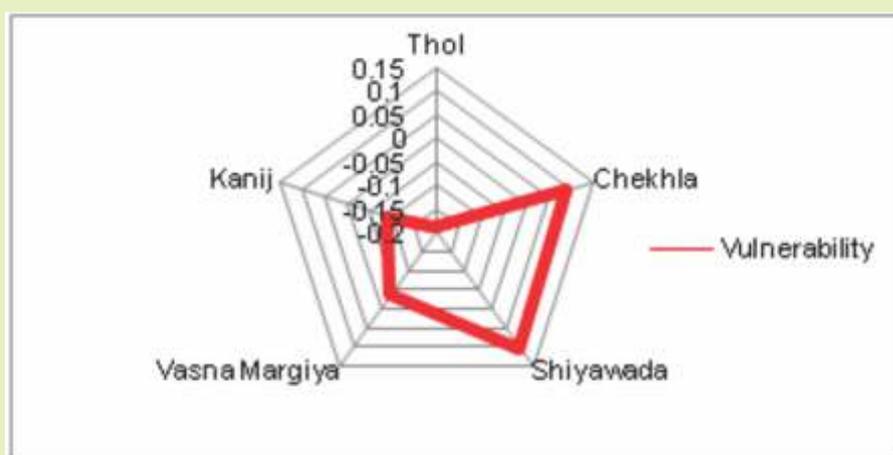
Each indicator was quantified by data collection (primary survey) in the villages and standardised. For each profile, Index was calculated. Once values for each profile of a village were calculated, they were averaged using equation below to obtain the village-level Livelihood Vulnerability Index:

$$\text{Livelihood Vulnerability Index}_v = \frac{\sum_{i=1}^n W_{pi} P_i}{\sum_{i=1}^n W_{pi}}$$

Where,

W_{pi} - weight of the profile i

The result of the Vulnerability assessment indicated that the village Shiyawada was most vulnerable followed by Chekhla. The Shiyawada was vulnerable because the indicators of the Agricultural profile and Water profile were performing weak. Shiyawada community were not aware of climate resilient crops and of crops diversification. Further, these villages were also facing water shortages due to lack of water storage facilities. The ground water in the villages were also depleting.



The adaptation strategies were identified by the company based on the results of the vulnerability assessment. The adaptation strategies identified for the villages were:

- Restore ponds and lakes in Shiyawada and Chekhla to improve their recharge capacity with the help of local partners. Developed check dams to reduce siltation and creating reservoirs. This reduced the dependency of the villages on ground water.
- Installed rainwater harvesting structures to collect and store rainwater in Shiyawada and Chekhla where the groundwater supply was depleting. These structures were built and managed in partnership with local welfare associations, NGOs, and community members. The structures also reduced the dependency on ground water.
- The company partnered with local farmers and NGO in Shiyawada and Chekhla to promote drip irrigation. NGO provided training and technical support to participating farmers, while company financed the training modules and partial funding for the drip irrigation equipment. The project is lowering farmers' water and fertilizer costs, increasing their yields, and conserving water in this water-scarce, agriculture dependent region.
- The company with local NGO provides training and technical support to participating farmers on sowing climate resilient crops and on crops diversification method.

The above adaptation strategies increased the resilience of the community to combat the impacts of climate change. Access to a sustainable water supply and climate resilient agriculture translated into improved livelihoods and overall economic growth of the villages. The company also benefited as its supply chain is resilient by making water and agriculture profile of the villages resilient.

While the companies, through taking adaptation activities as CSR are gaining brand/reputational value to their business and are addressing business risks, they are also

increasing community resilience to climate change. In addition they are contributing to the GOI's stated objectives towards combating climate change.

COP21 - 2015 Paris Climate Conference

The international political response to climate change began at the Rio Earth Summit in 1992, where the 'Rio Convention' included the adoption of the UN Framework on Climate Change (UNFCCC). This convention set out a framework for action aimed at stabilizing atmospheric concentrations of greenhouse gases (GHGs) to avoid "dangerous anthropogenic interference with the climate system." The UNFCCC which entered into force on 21 March 1994, now has a membership of 195 parties. The main objective of the annual Conference of Parties (COP) is to review the Convention's implementation. The first COP took place in Berlin in 1995 and significant meetings since then have included COP3 where the Kyoto Protocol was adopted, COP11 where the Montreal Action Plan was produced, COP15 in Copenhagen where an agreement to success Kyoto

Protocol was unfortunately not realized and COP17 in Durban where the Green Climate Fund was created.

In 2015, France will be hosting and presiding the 21st Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21/CMP11), otherwise known as "Paris 2015" from November 30th to December 11th on the Paris-Le Bourget site. COP21 will for the first time in over 20 years of UN negotiations, aim to achieve a legally binding and universal agreement on climate, with the aim of keeping global warming below 2°C. COP21 will be one of the largest international conferences ever held in the country. The conference is expected to attend by close to 40,000 participants including 25,000 official delegates from government, intergovernmental organisations, UN agencies, NGOs and civil society.



Game-Changing Climate Action Initiatives

Momentum for Change is an initiative spearheaded by the UN Climate Change secretariat. Momentum for Change recognizes innovative and transformative solutions that address both climate change and wider economic, social and environmental challenges. These solutions are called 'Lighthouse Activities'. They're some of the most practical, scalable and replicable examples of what people, businesses, governments and industries are doing to tackle climate change.

Sixteen game-changing initiatives from around the world were announced on 27 October 2015 as winners of the Momentum for Change Lighthouse Activity Award. Winning

activities include a seriously cool smartphone that puts social values first and an initiative that is enabling 40 Latin American cities to take concrete climate action. Others include a women-led initiative in Benin that uses solar energy to empower women farmers and an internal carbon fee that holds the business units of one of the world's most famous software and ICT companies financially responsible for reducing their carbon emissions. The Momentum for Change Awards are part of wider efforts to mobilize action and ambition as national governments work toward adopting a new universal climate agreement in Paris this year.

For more information on sixteen game-changing initiatives, please visit <http://newsroom.unfccc.int/unfccc-newsroom/2015-momentum-for-change-lighthouse-activities/>

Publically Available Tools on Climate Change Adaptation and Mitigation

Tool for Rapid Assessment of City Energy (TRACE)

TRACE is a decision-support tool designed to help cities quickly identify under-performing sectors, evaluate improvement and cost-saving potential, and prioritize sectors and actions for energy efficiency (EE) intervention. It covers six municipal sectors: passenger transport, municipal buildings, water and waste water, public lighting, solid waste, and power and heat.

<http://esmap.org/TRACE>

Energy Forecasting Framework and Emissions Consensus Tool (EFFECT)

EFFECT is an open and transparent modeling tool used to forecast greenhouse gas (GHG) emissions from a range of development scenarios. It focuses on sectors that contribute to and are expected to experience a rapid growth in emissions. The model was initially developed by the World Bank while working with the Government of India on an analysis of their national energy plan.

EFFECT has since been used in eleven countries, including Brazil, Poland, Georgia, Macedonia, Nigeria, and Vietnam.

<http://esmap.org/EFFECT>

Hands-on Energy Adaptation Toolkit (HEAT)

HEAT has been designed to support hands-on climate vulnerability and adaptation assessments of the energy sector. It provides a risk-based process to inform high-level decision-making by governments about how to adapt the energy sector to improve its resilience to climate variability and climate change.

<http://esmap.org/node/312>

Urban Transport Data Analysis Tool (UT-DAT)

The Data Analysis Tool for Urban Transport is a simple Excel-based tool that enables users to compare several urban transport related indicators in a city with similar indicators in peer cities. Such a comparison would allow users to identify areas where the city under study is performing well or is performing poorly.

<http://www.worldbank.org/en/topic/transport/publication/urban-transport-data-analysis-tool-ut-dat1>

Online Toolbox of Methodologies on Climate and Energy

Run by ICLEI Europe, this growing collection of resources is valuable for all local governments addressing climate and energy.

<http://toolbox.climate-protection.eu/home/>

Climate Resilience Framework

The Climate Resilience Framework is a conceptual framework for simplifying and analyzing complex relationships between people, systems, institutions and climate change. The framework helps clarify factors that need to be included in the diagnosis of climate vulnerability, structures the systematic analysis of vulnerability in ways that clearly identify the entry points for responding, and supports strategic planning to build resilience to climate change.

<http://training.i-s-e-t.org/>

Aware - Climate Risk Screening Tool

AWARE is an online climate risk screening tools, designed to help quickly and easily identify and understand the potential risks to projects from climate change. Through reliance on pre-determined impacts, risk factors (tables), and assumptions, this checklist alerts project officers to potential climate-induced and disaster-related impacts and risks, and allows for possible incorporation of risk reduction measures at the project concept/preparation stage. The tool produces a climate risk assessment report that provides a summary of key risk areas (with a ranking of low, medium, or high), as well as narratives describing potential impacts of climate change and adaptive measures for further consideration.

<http://www.acclimatise.uk.com/index.php?id=4&tool=1>

The Update section has been compiled by Krupa Desai and Kiran Apsunde, Environmental Management Centre LLP, Mumbai

Sustainability Committee Activities

Round table Meeting on Road Safety

- October 15, 2015

Bombay Chamber organized a Round Table Meeting on October 15, 2015 with the industries working on Road Safety. The main objective of the Roundtable was to get like-minded companies together to share their initiatives on Road Safety. This meeting aimed to understand the various types of initiatives undertaken by the organisations and learn from each other. The opportunity of working in synergy with like-minded organisations was also explored. 12 Corporate participated in this Roundtable with each organisation presented their initiatives at the meeting.

Training in Monitoring and Evaluation

- December 15, 2015

As part of capacity building activity under LEAD project a One-day M&E training course for Bombay Chamber on M&E skills to improved documentation of its training programs and post training follow-up process. This training helped build skills and develop a standard training assessment approach.

Training Course

- December 17-18, 2015

Bombay Chamber and USAID LEAD Program organized Training on Environmental Management in Food and Agro Processing Industries held on 17-18th December, 2015. The Two Day Technical Sessions covered the various advanced and upcoming aspects related to sustainability in food production, processing and consumption. Some of the international best practices on Waste minimization; Resource Conservation for product design and Sustainable production and consumption were taken up in depth with case studies.

FORTHCOMING PROGRAMS

Conference on Safety Excellence in City Offices and Transport on Road Conference on Safety Excellence in City Offices and Transport on Road

- January 28-29, 2016

Two day Conference on Safety Excellence in City Offices and Transport on Road. This program will cover the key areas in Office Safety with Fire and Road Safety.

To know more about the Conference details pl. contact csr@bombaychamber.com; 61200227 or sustainability@bombaychamber.com; 61200214

Training Courses offered by the Chamber

Bombay Chamber of Commerce and Industry is 178 years old organisation, an oldest Chamber in the Country. It has been understood that the Sustainability of the business is dependent on the human resource of the organisation. The corporate are investing on their very important Human Resource to enhance their knowledge and skills. As a service to the members and potential members, the Chamber is offering following training courses.

- (1) Women Safety and Self Defence
- (2) Road and Travel Safety
- (3) Office Safety
- (4) Fire Safety
- (5) Corporate Social Responsibility: Policy to Practice

We are sure of organisations like yours will benefit from the opportunity.

RSVP:

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