

## Current Issue: Corporate Social Responsibility in Environment Management and Sustainability



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### From Director's Desk



Industrial growth is one of the important facets for the economic development of a country. In last 50 years, technological innovations have accelerated the industrialisation at global level but resulted in the depletion of natural resources, degradation of environment and harmful impacts on human health. After Earth Summit in 1992, industries have been asked to adopt efficient production processes, preventive strategies, cleaner technologies and procedures throughout the product life cycle for reducing impact on resource use and the environment.

Subsequently, industries have incorporated several sustainable measures in their operations and taken greater responsibilities towards environment and society through Corporate Social Responsibility by integrating it in business strategy. The proactive policies of government towards CSR further added momentum in developing effective practices by industries for the conservation of environment and societal development by compulsory publication of business sustainability report. For trapping real benefits from CSR, now industries have to move on from looking CSR as mainly a public relations opportunity to a tool for generating transformative innovations for sustainable production processes, environment management and societal development.

It is our attempt through the current issue of newsletter to evaluate the role of industries in CSR and pertinent issues that need attention for improving its positive impacts on environment and society.

Season's Greetings for New Year and Happy Reading!

Dr. Seema Mishra



## Environment Management and Corporate Social Responsibility

**Dr. S.V. Viswanathan**

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The challenges in a globalized world is a typical phenomenon affecting every country and state; example of this is a typical November month a winter in New Delhi caught in the burning of hay and wastes of produce in surrounding states; adding to these woes are the westerly winds from middle east bringing in sand and pollutants in the air; resulting for all to see in Delhi, poor visibility, highway serial accidents, schools getting closed, tourists avoiding Delhi and war between political parties, agencies and media. It is therefore important that National responsibility for technological research, interdisciplinary research and cooperation across disciplinary boundaries are understood and fixed & are the need of the hour. Equally important to Globalization for strategic areas for research are Energy, Environment, Information, Communication, Marine, Maritime, Materials, Medical technology. Globalization involve the global value chains, information technology, culture & knowledge, environmental & social responsibility. Industrial ecology will involve flow of materials and energy in industrial and consumer activities affecting environment, influence of economic, political, regulatory & social factors of the flow, use and transformation of resources.

We call it a CSR when organizations integrate social, environmental concerns in their business strategy and operations on a voluntary basis along with all the stake holders. Company Social Responsibility governs aspects of Environment, Social & Economy while Sustainable development is that meets the needs of the present generation without compromising the ability of future generations to meet their own needs.

For sustainability purposes three levels are generally considered :

- i. Organizations : Design for environment, pollution prevention, eco- efficiency, green accounting & environment management.
- ii. Across Organizations : Industrial symbiosis, product life cycles, industrial sector initiatives.
- iii. Regional /Global : Material and energy flow studies, policies and strategies, SCM

Sustainability environmental concerns will include Environment engineering, Pollution Prevention, Design & Manufacturing, Industrial ecology. These are then plotted over time viz the product life cycle into human life span, civilization Span for conclusion. The framework of sustainable development considers three aspects viz: Economic, Environmental and social. Environmental strategy involves a holistic perspective, increased use of systems thinking, and standards.

List of standards in ISO 14000 series :

- **ISO 14001** Environmental management systems - Requirements with guidance for use
- **ISO 14004** Environmental management systems - General guidelines on implementation
- **ISO 14006** Environmental management systems - Guidelines for incorporating ecodesign
- **ISO 14015** Environmental assessment of sites and organizations
- **ISO 14020 series** (14020 to 14025) Environmental labels and declarations
- **ISO 14030** discusses post-production environmental assessment
- **ISO 14031** Environmental performance evaluation—Guidelines
- **ISO 14040 series** (14040 to 14049), Life Cycle Assessment, LCA, discusses pre-

production planning and environment goal setting.

- **ISO 14046** sets guidelines and requirements for water footprint assessments of products, processes, and organizations. Includes only air and soil emissions that impact water quality in the assessment.
- **ISO 14050** terms and definitions
- **ISO 14062** Integrating environmental aspects into product design and development (2002)
- **ISO 14063** environmental communication guidelines and examples (2006)<sup>[11]</sup>
- **ISO 14064** measuring, quantifying, and reducing greenhouse gas emissions
- **ISO 19011** specifies one audit protocol for both 14000 and 9000 series standards together

Continual improvements will involve application of kaizen, PDCA & PDSA & other quality breakthrough improvement tools such as Lean Six Sigma. Proper establishing of ISO 14000 ensures sustainable development. Methods and tools can be categorized as per follows:

**Process related:**

For cleaner production, environmental accounting;

**Product related:**

Life cycle assessment, Material, energy & Toxicity analysis, Material input per service unit, Design for the Environment;

**Management related:**

Environmental auditing, performance evaluation & Management & systems.

Scope of temporal concern will include on a time scale pertaining to manufacturing use & disposal, manufactures and society as a large over system/ product life cycle, company's life time and human life time. While on a larger global scale energy, material or resource efficiency, emission and economic efficiency are addressed. So also at the facility stage wastes in to air, soil and water are controlled. Further as much as possible recycling of wastes/ by products or material are done.

Waste disposal and recycling of materials become key to success of any organization. From environmental impact point of view Global warming, Ozone depletion, eutrophication, acidification become critical issues. Thus, Global Reporting Initiative for communicating information is all about corporate performance

for comprehensive sustainability reporting. A typical example could be fuel efficiency improvement say by 25%.

**THE INDICATOR FRAMEWORK CATEGORY:**

- 1) Direct economic aspects such as customers, suppliers, employees, providers of capital, public sector
- 2) Environmental such as Materials, Energy, Water, Biodiversity, Emissions, effluents & waste, supplies, Products & services, Compliance, Transport
- 3) Social can be further segregated as:
  - a. Labour practices such as employment, labour-management relations, health & safety, Training & education, Diversity & opportunity;
  - b. Human rights such as Strategy & management, Non-discrimination, Freedom of association & collective bargaining, Child labour, Forced & compulsory labour, Disciplinary practices, Security practices, Indigenous rights
  - c. Society such as Community, Bribery & corruption, political contributions, Competition & pricing
  - d. Product responsibility such as Customer health & safety, Products & services, Advertising, Respect for privacy

From a company prospective it is important to look on

- a. environmental issues such as requirements to performance viz: suppliers and products
- b. social issues such as obligations to provide information about management procedures, product potential implication

Environmental performance indicators could be energy usage, emission to air, discharge to water bodies, wastes

Environmental condition indicators could be energy supply, air quality, water bodies quality, Use of land for waste disposal, discharges from landfill areas.

CSR in global value chain involves project goals to undertake a critical examination of current CSR business and regulatory practices; develop practice oriented recommendations mechanisms and tools aimed at improving current CSR performance, reporting and verification systems & regulations.

Corporate Social Responsibility involves:

Governance Leadership: Economic impact, ethics, Integrity  
 Employees: Health and safety; Competence, Diversity  
 Market: Business conduct, corruption, reputation  
 Authorities: Compliance with law, Business and politics, Partnerships  
 Civil society: Human rights, Local community, transparency  
 Environment Sustainability: Pollution & waste, Energy & resources; Product safety

The future of CSR will involve, answering who are the most important stakeholders for a company – Customers, Suppliers, Employees, Investors, Government, Local community, etc. How can companies best manage the challenge towards sustainable development? And what is the role of systems understanding?

**A typical CSR on a PDCA for continuous improvement on Social Policy is as follows:**

**Plan:**

Stakeholders value  
 Legal requirements and standards on products, processes, activities, services & suppliers  
 Code of conduct  
 Social indicators and targets  
 Define a CSR management system

**Do:**

Implement Plans  
 Training, awareness and competence building  
 Communication

**Check:**

Monitoring & measurement  
 Social assessments  
 Records

**Act**

Management review  
 Non-conformance review and preventive actions  
 Evaluate policy

**Figure 1: The Plan-Do-Check-Act Cycle**



Lean will involve adding value by eliminating wastes, reduction of cycle time and elimination of defects. Six sigma ensures reduction of variations and ensuring robustness of the processes. Together Lean Six sigma is a powerful tool for better results.

CSR management as systems engineering will involve the following steps:

1. Identify the needs i.e. obligations to deliver information.
2. Define the requirements i.e. Clear communication
3. Specify the performance i.e. Quantification of information
4. Analyse and optimise i.e. benchmarking

5. Design and solve i.e. CSR reports
6. Verify and tests i.e. verification criteria and procedures

And Progress toward sustainability will involve both:

1. Environmental engineering
2. Pollution Prevention
3. Environmental Conscious Design and Manufacturing
4. Industrial ecology
5. Sustainable development

Reference:

Annik Magerholm, Oct 2006, "Environmental Management and Corporate Social Responsibility – the challenges in a globalized world"



## **Corporate Social Responsibility and its Key Role in Environmental Sustainability**

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### **Introduction**

Corporate Social Responsibility (CSR) is termed as the responsibility of an organisation towards the community and environment (both ecological and social) in which it operates. It can also be described as embracing responsibility and encouraging a positive impact through the organisation's activities related to the environment, consumers, employees, communities, and other stakeholders.

India is a developing country and faces severe challenges in terms of poverty, health, sanitation, environment and education among others. The economy of India is growing rapidly and thus, environmental and social development are equally important. Traditionally, CSR was being done as a philanthropic activity wherein companies typically focused on carrying out activities which according to them were the need of society and were in line with the ethos of their value system. In the 21<sup>st</sup> century, CSR has evolved in India with companies now contributing to nation building by focusing on enhancing the livelihood of the communities they operate in. With CSR now being mandated in India by the regulation of Companies Act, 2013, there is a growing interest from corporations to contribute to the social upliftment of the country. Companies in India are taking strategic adequate measures to contribute to CSR through various developmental initiatives in the areas of health, education, livelihood enhancement, water management and environment conservation.

### **The CSR mandate in India**

As per Section 135 of the Companies Act, 2013, companies having net worth of INR500 crore or more or turnover of INR1000 crore or more or a net profit of INR5 crore or more in a financial year are required to spend 2 per cent of the average net profits of the last three years for the company's Corporate Social Responsibility (CSR) policy. Activities which may be included in the CSR policy by the companies are specified in schedule VII of the Companies Act, 2013. Section 135 along with Schedule VII and corresponding Corporate Social Responsibility Policy Rules have come into effect from 1 April, 2014. Schedule VII refers to the activities which may be included by companies in their CSR policy activities related to:

- i. Healthcare, eliminating poverty, sanitation & clean water
- ii. Education, vocational skills, livelihood
- iii. Gender equality, women empowerment, reducing inequalities
- iv. Environment protection of flora and fauna, conservation of resources
- v. National heritage, art, culture
- vi. Benefits of armed forces veterans, war widows
- vii. Encouraging sports
- viii. Prime Minister relief fund/ central welfare fund
- ix. Technology incubators
- x. Rural development
- xi. Slum area development.

### **CSR and Environmental Sustainability**



CSR entails a corporation's efforts to assess and take responsibility for the company's effects on environmental and social wellbeing. Protection of environment is a concern of every socially responsible organisation. A socially responsible company contributes to sustainable development, by ensuring that its activities are in harmony with the environment.

In order to ensure environmental sustainability, companies worldwide are taking steps to use resources in a sustainable manner, establish a healthy and safe working environment, maintain ecological balance, combat climate change, minimise waste generation and thus, preserve the environment. In the process of manufacturing products and providing services,

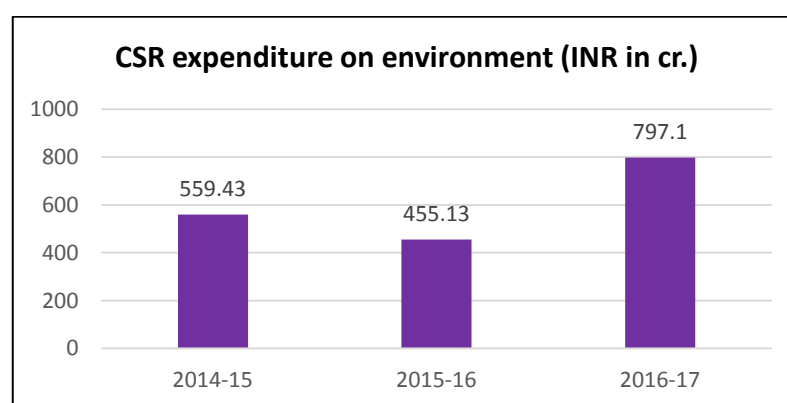
companies are also striving to achieve excellence in their environmental performance.

### **CSR expenditure on the environment in India**

KPMG in India surveyed the CSR reporting of the top 100 listed companies as per market capital on the National Stock Exchange (N100). The findings were compared to the previous years and certain trends were established.

#### **1. CSR expenditure of Indian companies on the environment**

As per KPMG's survey, there is an increasing trend of CSR expenditure on the environment in 2016-17 while 2015-16 showed a significant reduction in the same.



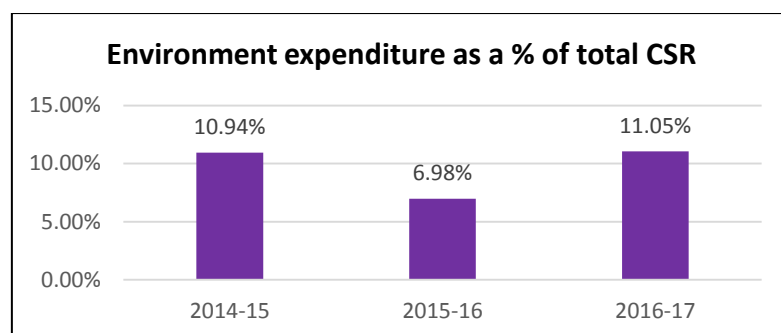
Source: KPMG in India's CSR reporting survey 2016

#### **2. Environment expenditure as a percentage of the total CSR spend in India**

As per KPMG's survey, the environment expenditure as a percentage of total CSR spend in 2016-17 increased by 4.07 percent while 2015-16 showed a reduction by 3.96 percent when compared to previous year.

#### **Leading practices – CSR and the environment**

Since the past decade, there is a growing focus of Indian companies on ensuring environmental sustainability. In cognisance with the fourth activity (Environment Protection of Flora and Fauna, Conservation of Resources) of Schedule VII of the Companies Act 2013, companies are striving to achieve environmental sustainability by taking significant strides to conserve nature.



Source: KPMG in India's CSR reporting survey 2016

Companies are setting objectives and targets to minimise their negative environmental impacts to reduce pollution and tackle climate change. To do so, companies have adopted appropriate operational practices and suitable technologies to monitor, control and minimise the impact of their activities on environment. Companies are striving to abide by global and national legislative and regulatory environmental requirements and even go beyond these requirements. Companies are consciously mitigating environmental impacts of their business operations through the vigilant use of natural resources, optimisation of energy efficiency, waste and water management and reduction in GHG emissions.

Some of the leading initiatives with respect to CSR in the environment are as follows:

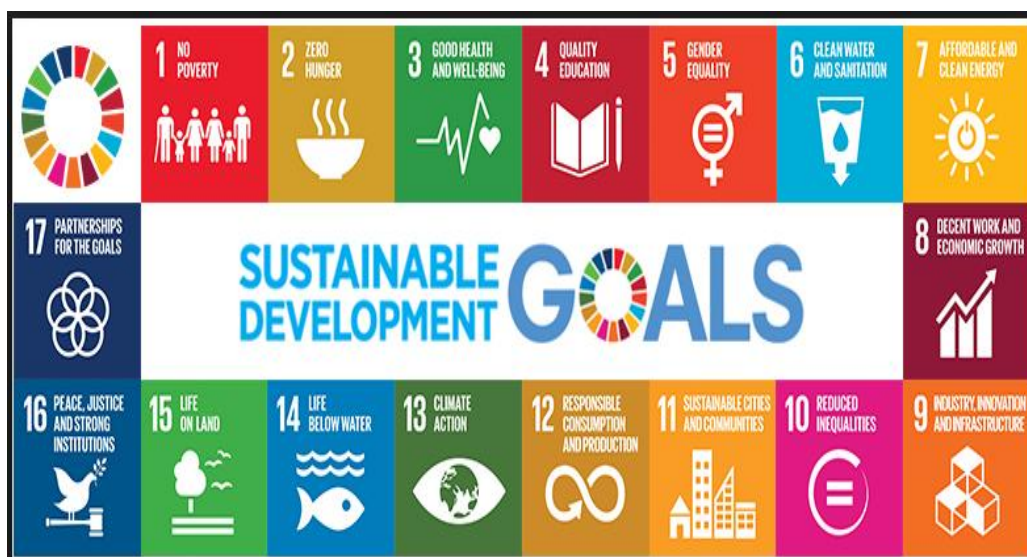
- A multinational technology company uses 100 per cent renewable energy sources such as solar, hydro and wind power to power its data centres. The company is using more than 99 per cent recycled and responsibly sourced paper in packaging by sourcing virgin paper responsibly, protecting sustainable forests, and making its mobile boxes from responsibly managed paper, bamboo, and waste sugarcane. The company has also committed to move its supply chain

to 100% renewable energy usage. To do so, the company targets to help its suppliers bring 4 gigawatts of renewable power online by 2020

- An Indian conglomerate has created rain water harvesting capacity of 5.86 crore cubic metres in FY 2016-17 by constructing various harvesting structures including new and renovated earthen check dams, masonry check dams, farm ponds and open wells, temporary structures such as boribandhan, tanks etc. This initiative has brought about 2,900 hectares of land under water efficient irrigation system. The company has planted over 1.38 crore saplings since its inception to bring about ecological security. The company has thus brought about 56,000 hectares of land under improved cultivation.

### The UN SDGs and CSR

With the advent of UN Member State's 2030 Agenda for Sustainable Development in 2015, environmental sustainability, CSR has become a global priority. The Agenda consists of a set of 17 goals to end poverty, fight inequality and injustice, and tackle climate change. A total of 17 SDGs aimed at 169 targets are set to be achieved by 2030.



The UN SDGs and Indian CSR regulation both were formulated around the same time and seemingly have a tremendous potential to develop a cohesive sustainable model. Shown below is an illustration of various SDGs mapped

with the fourth Schedule VII activity (Environment protection of flora and fauna, conservation of resources) of the Companies Act, 2013.

Schedule VII Activity	Sustainable Development Goals (SDGs)
<b>Environment protection of flora and fauna, conservation of resources</b> Ensuring environmental sustainability, ecological balance, protection of flora and fauna, animal welfare, agroforestry, conservation of natural resources and maintaining quality of soil, air and water including contribution to the Clean Ganga Fund set-up by the central government for rejuvenation of the river Ganga	

Source: Sustainable Development Goals (SDGs): Leveraging CSR to achieve SDGs, KPMG in India

### Way forward

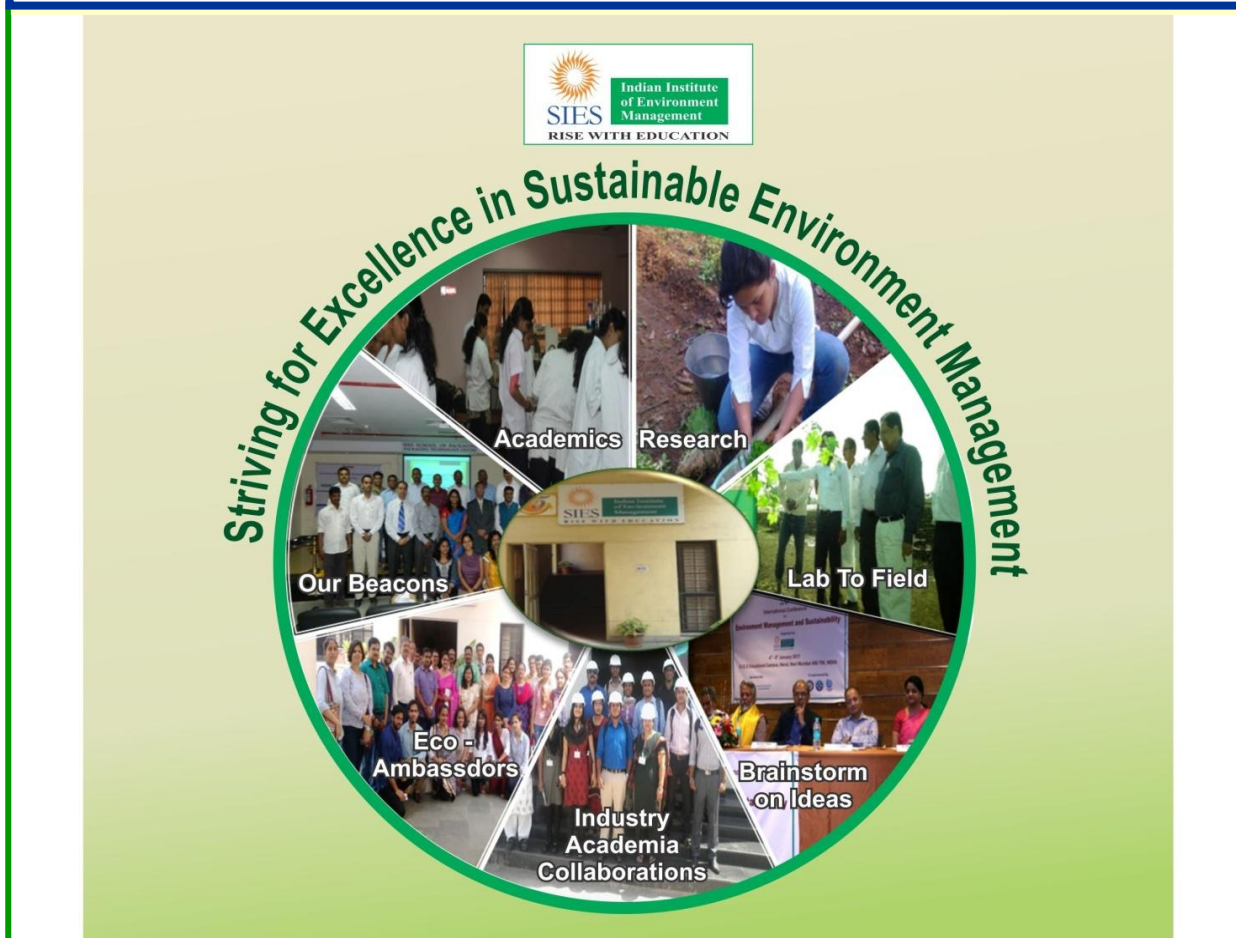
With the passage of Companies Act 2013, CSR has been mandated for Indian companies. The companies have responded positively to this mandate and are contributing significantly to the overall development of the country. The UN SDGs have further leveraged and strengthened the CSR activities implemented by Indian companies thus enabling India to achieve its

Sustainable Development Goals. There is a great potential to achieve environmental sustainability through responsible business operations. Commitment to CSR improves the overall living standard of the society and can help India become a sustainable nation through economic growth, social upliftment and environmental protection.



## SIES Indian Institute of Environment Management

A recognised R&D Centre under University of Mumbai



### Major Activities

#### Academics

- M. Sc. and PG Diploma Programmes

#### Outreach

- Community mobilization
- Capacity building

#### Research

- Technology development and dissemination
- Funded projects
- Industrial projects
- Collaborative Projects
- Research Training (for Industries, summer training/ dissertation)
- R&D Proposal and Report Writing
- Expert lectures
- Conference/ Seminars and Workshops

#### Consultancy

- Process development and assessment for waste management and pollution control.
- Industrial projects
- Collaborative projects
- Lab Testing of different environmental samples
- Impact assessment
- Training modules on environmental regulatory and technological approaches
- Documentation and report preparation
- Capacity building

## **Corporate Social Responsibility @ SIES Indian Institute of Environment Management (SIES IEM)**

SIES Indian Institute of Environment Management is a premier institute in the field of sustainable environment management for last 18 years. The institute is proactively striving for generating value based technological innovations and developing future leaders for the Sustainable Management of Environment. The technologies generated in the institute as well as identified have been transferred for the betterment of society by establishing linkages with multisectoral partners. The industries have been guided and supported for creating, managing and monitoring of CSR initiatives on turn key basis. Some of the key areas wherein institute has expertise are as below :

<b>Technical Support in CSR</b>	<b>CSR Services</b>
<b>Support in the development of CSR strategies for industries</b>	<b>Linkages with NGO partners</b>
<b>Implementation of CSR strategies in industries and execution of activities in the areas of environment and societal development</b>	<b>Community engagement and mobilization</b>
<b>Stakeholder engagement</b>	<b>Capacity building</b>
<b>Compliance and regulatory affairs in the areas of environment</b>	<b>Training and outreach activities</b>
<b>Impact Assessment of CSR activities by industries</b>	<b>Volunteering</b>
<b>CSR Communications</b>	<b>Promotions</b>

### **Glimpses on the community engagement and mobilization activities by SIES IEM**



Field trials and mobilization of farming community in technology implementation and income generation activities



Engagement of coastal community in coastal pollution management



Sensitization of students from rural schools on the implementation of low cost technologies in pollution control



Training of farmers for value addition and income generation



## ITC Mission Sunhera Kal - Solid Waste Management

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ITC is one of India's foremost multi-business enterprise with a market capitalisation of US \$ 50 billion and a turnover of US \$ 8 billion. ITC's aspiration to create enduring value for the nation and its stakeholders is manifest in its robust portfolio of traditional and greenfield businesses encompassing Fast Moving Consumer Goods (FMCG), Hotels, Paperboards & Specialty Papers, Packaging, Agri-Business, and Information Technology.

Almost two decades back, ITC redefined its vision to make societal value creation the bedrock of its business strategy. Since then, the Company, through its Social Investment Programme – ITC Mission Sunhera Kal, has leveraged its innovative capacity and enterprise strength to create sustainable livelihoods, empower local communities, enrich the environment and address the challenges of climate change. The interventions target communities residing in our agri and factory catchments and follow a two pronged strategy of:

- a. Creating sustainable sources of livelihoods today for the target communities through interventions in the area of water stewardship, afforestation, sustainable livelihoods and women empowerment.
- b. Helping create a healthy, skilled and educated workforce capable of competing in the marketplace of tomorrow through interventions in Sanitation, Solid Waste Management, Mother & Child Health, Education and Skilling.

This note attempts to share in brief ITC's approach towards Solid Waste Management (SWM) and the emerging outcomes.

The challenge of increasing Urban Solid Waste and the ing menace of unmanaged waste, burgeoning landfills has already been well documented. The attempts made to manage waste have largely involved collection of waste from the households and thereafter dumping of the same in municipal landfills with over 65% of the waste collected getting dumped, untreated. The problem in effect just gets transferred from one location to another.

Through its Social Investments Programme – ITC Mission Sunhera Kal, ITC has attempted to create sustainable models for Solid Waste Management for Small Towns, Rural catchments, and Temples. The desired outcome of the Solid Waste Management Programme is **“Minimal waste to landfill”** in a sustainable manner.

### Approach for Small Town and Rural SWM:

ITC has always believed in an approach of Partnership and formation / strengthening of Community Based Organizations (CBOs) in its projects for participatory planning, ownership and to drive scale and sustainability.

The SWM intervention too is initiated in partnership with Municipal Corporations / Gram Panchayats so that wherever feasible infrastructure / facilities including land, utilities and transportation, communication on household charges related help can be provided to the Project.

Households (150-200) are clustered into local “Mohalla Committees” in each Project catchment for decentralized self-management of waste and long term sustainability. Thereafter the focus is on behaviour change through

Information, Education, Communication to drive Source segregation of waste at household level. The Rag-pickers and waste collectors, largely from marginalized communities (including women), are the key stakeholders in the Project for Door-to-door collection and are attached to the Mohalla Committees. The Households who are a part of the Mohalla Committee, pay a service charge for waste collection – based on the principle of Polluter Pays – over time directly to the Waste Collector attached to the Committee. Decentralized management of Bio-degradable waste through Home based composting and bio-composters/ Farm Yard Compost Pits for the community is encouraged to drive ownership and long term sustainability through a community owned SWM model. The approach of managing waste as close to the generator as possible, minimizes multiple handling of waste and reduces costs and associated environmental impacts. The compost generated is used by the Households and the Community for kitchen / nutrition gardens and to further enhance common green areas. In certain locations, SHG led enterprises have also sprung up to purchase compost from households and sell to nurseries as also for sale of gardening equipment and accessories, pots and grow bags for households, seeds etc.

The SWM intervention by ITC Mission Sunehra Kal, enhances social and financial inclusion and HDI indicators of the Rag Pickers and Waste Collectors, by linking them to the Government Social Security Schemes. The Rag-pickers attached to the Mohalla Committees also own the recyclable waste collected, thereby adding to their income.

Sustainability of the model is driven through revenue generation including household levy for waste management based on the principle Polluter Pays, Sale of Compost and Recyclables where applicable. Both Bio-degradable and Non-biodegradable waste get managed such that there is minimal waste reaching the landfills/dumps.

The SWM intervention for small towns and rural catchments currently impacts over 65000 households in 8 districts, 7 states.

### **Approach for Temple SWM**

A Green temple model for SWM was piloted in a temple in Chennai, a year back, with extremely encouraging results. As in all interventions, the approach has been to involve and partner with the temple community volunteers to own and take the initiative forward. Post an assessment of the nature and quantum of temple waste, there is provision of Bio-Composters and / or Bio-Gas unit being positioned to manage the waste within or close to the temple premises. This is supported further through training / IEC of the Temple volunteers, and also the vendors selling puja offerings/ flowers etc in the vicinity of the temple to avoid use of plastic bags for packaging etc. The compost generated is used in the temple garden and leftovers sold to devotees visiting the temple. The bio-gas plant is linked to the temple kitchen for cooking the Prasadam for the devotees. This circular economy model of temple waste management leads to over 90% of the waste generated getting managed within the temple and, for the temple reduces purchase of gas cylinders for cooking of Prasad, thereby impacting costs.

The Green temple model of SWM is currently operational in two temples in Tamil Nadu.

### **Well Being Out of Waste (WOW)**

WOW, is an initiative to promote Resource conservation and recycling. It creates awareness about “Reduce-Reuse-Recycle” approach in protecting and restoring the environment among the general public, school children and Corporates. Besides addressing the growing concern of post-consumer waste management, this programme also inculcates the habit of source segregation and provides recyclables for a number of industries. The intervention impacts 64 lakh citizens, 25 lakh school children and 2000 corporates.

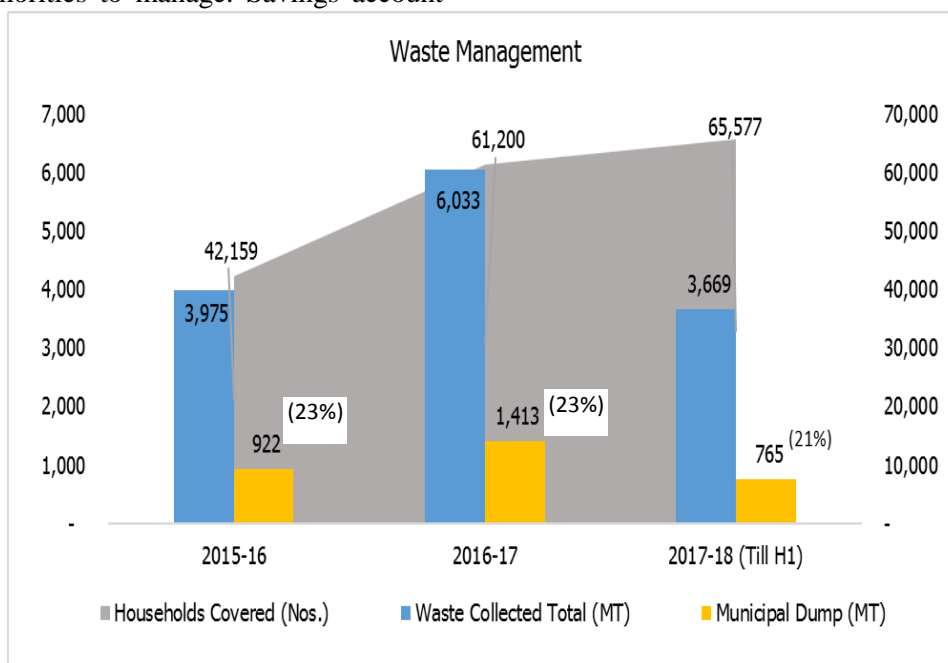
### **Emerging Outcomes:**

- Approximately 21% of the waste managed goes to the landfill. In the best Project waste to landfill is at less than 10%.
- Source segregation by 46% % of the households

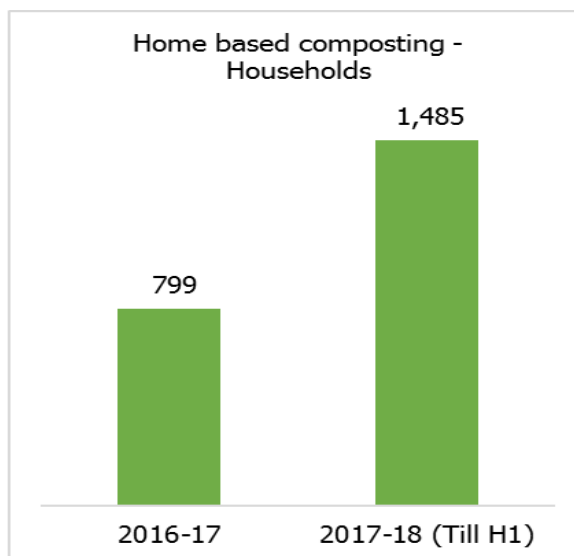
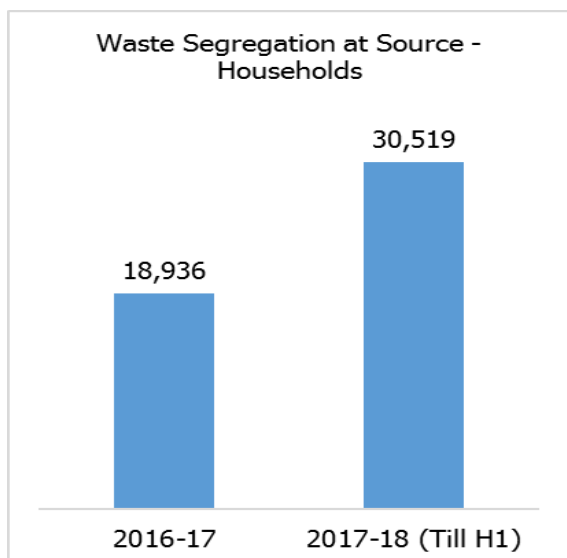
- Mohalla Committees formed and taking charge of managing waste in their areas – My Waste, My Responsibility
- Revenue generation helping subsidize project cost to the tune of 28% on an average and 45% in the oldest project – an improving trend observed
- Demand generation from neighbouring catchments, Government bodies to partner for expansion of the model in other localities
- The first Green temple SWM project successfully handed over to the temple authorities to manage. Savings account

reduction in purchase of Gas Cylinders of approx. Rs 10,000/- pm

The graphs below highlight some of the outcomes -







## Way Forward

Our interventions in diverse geographic catchments, with different communities, and the emerging outcomes clearly highlight to us that one of the most potentially sustainable approach to SWM is where the community takes ownership for managing its waste –

operationally and financially. The current approach to urban SWM which incentivises collection of waste, rather than management of waste to minimize waste to landfills, needs to be revisited, for long term and sustainable outcomes.



Segregated Waste from households



Rural SWM



Small Town SWM



Green temple Bio-gas plant connected with cooking stove



Educating street vendors



### Home Composting and Gardening

## Natural Capital Assessment Services @ SIES Indian Institute of Environment Management

The faculty at SIES IIEM are skilled researchers with many years of academic and consultancy experience. We deliver high quality and rigorous ecological and environmental data, backed up by extensive project management experience. We emphasize on effective knowledge exchange to ensure sector specific project as per client requirement. The specific area wise expertise available @ Natural Capital Exchange at SIES IIEM are as below:

### Implementation of Natural Capital and Ecosystem Services Concept

- Integration of business practices and decision making with natural capital and ecosystem services concept.

### Assessment of Natural Capital and Ecosystem Services

- Qualitative and quantitative approaches
- GIS mapping
- Foot printing
- Stakeholder engagement

### Land Use and Biodiversity Opportunity Mapping

- GIS based land use map of an area, habitat and species

### Training and Capacity Building



## Moving Beyond Traditional Corporate Social Responsibility

**Anthony Raivellur**

Quality Analyst and My Environment Lead (Mumbai)  
Bank of America Continuum India Pvt Ltd.

Remember when sustainability was the next ‘big thing’? Oil companies trumpeted they loved the environment; cement and steelmakers promised to improve air quality. Even services companies – hardly the biggest polluters – highlighted they used only chlorine free paper.

Today, of course, companies’ adherence to good Environmental, Social and Governance (ESG) practice is expected and the message of good corporate citizenship has sunk in. Businesses can be sure there will be stakeholders – clients, employees, investors or media – checking they walk the talk.

With so much genuinely achieved, I reckon it is time to look at Corporate Social Responsibility (CSR) again.

CSR is no longer about just caring for global warming. Nor is it even the broader concept of a business’s overall impact on local communities and cultures. Instead, a company’s performance today should be judged in the widest way possible, showing how strategic objectives and material topics actually support the long-term creation of value for the business and society at large.

I work for one of the world’s largest bank and our Corporate Social Responsibility focus reflects our values, presents tremendous business opportunity and allows us to create shared success with our clients and communities. It’s finding innovative ways to deploy capital and activate partnerships to fuel social and economic progress around the world. It’s investing in our employees—ensuring they have the

resources to reach their goals at work, at home and in their community. And it’s focusing on customers—developing lasting relationships through responsible products, services and advice. All of this is underscored by disciplined risk management that ensures we’re building a company that will endure as a place that people want to work for, invest in and do business with.

We’ve integrated our CSR approach into our eight lines of business, helping to deliver new business and increase shareholder value. We believe this approach defines who we are and best positions us for sustainable growth. We believe the market will ultimately reward companies with responsible business practices and a long-term view. What was once considered a nice to-do has become a business imperative, underscored in “ESG: good companies can make good stocks,” a 2016 report from BofA Merrill Lynch’s Global Research team. The report found a company’s ESG performance is a reliable indicator of its future stock performance.

Highlights of our CSR work in 2016 include continued progress toward our \$125 billion goal to support clients connected to clean energy and other environmentally supportive activities. We’ve directed \$49 billion since 2013, with \$15.9 billion in 2016 alone. We’ve also been the lead green bond underwriter globally for three years, underwriting nearly double our closest competitor’s business, and issuing three of our green bonds totaling \$2.1 billion. We launched the Catalytic Finance Initiative (CFI) in 2014 with a \$1 billion capital commitment to drive growth and help de-



risk clean energy projects, such as wind and solar innovation. In 2016, we expanded the CFI to include several leading financial

organizations, resulting in a total commitment of \$8 billion marked for sustainable investments.

### **Beach cleaning initiatives**



While aiming to increase profit, companies also need to put the focus on how it is earned. This requires a mind-set change for many executives, to move away from thinking and acting in quarterly reporting cycles towards investing long-term by taking into account their company's impact on the lives of future generations.

Those that can demonstrate their businesses benefit to stakeholders and society at large gain an edge in attracting and retaining talent. Additionally, setting a good corporate example can inspire others to aim for the highest standards. And, finally, doing business responsibly and with a focus on future generations has the potential to create deeper relationships with clients by becoming more than just a supplier but a valued and trusted business partner.

Traditional financial reporting excludes too many factors influencing a company's reputation, long-term performance – and hence value. Reporting on pre-financial KPIs offers broader information about a firm's capacity to create value, allowing those interested to better assess risks and opportunities.

CSR cannot remain a side pursuit for companies but must move to become an integral part of a company's business strategy and performance reporting. CSR is not a matter of generous grants and worthy foundations - companies are defined by what they do, not what they give. Therefore, businesses must increasingly unlock their intellectual assets and the power of their people to gain real traction. That means having a clear, widely understood and shared, purpose which drives prosperity for society at large.



## SIES INDIAN INSTITUTE OF ENVIRONMENT MANAGEMENT

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### ADMISSION NOTIFICATION

## M.Sc. in Sustainable Development and Environment Management (M.Sc. SDEM) Academic year 2018 – 19

This job oriented course is aimed to inculcate the knowledge based on sustainable environment management applicable to different sectors viz. research, academics, industries, NGOs and service sector. The programme equips individuals to solve problems in these fields at source rather than through end - of - pipe interventions. It aims to satisfy an industrial and public sector demand for trained environment management and sustainability professionals.

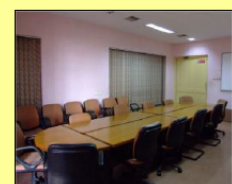
**Eligibility:** B. Sc. / B.E. degree or equivalent

**Duration:** Two year- Full Time



### COURSE HIGHLIGHTS

- Highly experienced faculty and high faculty/student ratio
- State of the art well equipped laboratory for practicals
- Industry centered curriculum with emphasis to develop sustainability professionals
- Interdisciplinary approach
- Innovative pedagogy
- Focus on innovation through project activities and industrial training
- Linkages with various stakeholders like industry, NGOs, consultancy and government departments
- Focus on improving individual skills
- Specialized library
- Placement assistance provided



**Admission process is starting from May 2018**





## **Ambuja Cements Limited, Ambujanagar: Sustainability Initiatives**

**Dr. Anand K. Rai**

**Head Environment**

Environment Management Department,  
Ambuja Cements Limited, Unit: Ambujanagar  
Kodinar, Dist: Gir Somnath (Guj.)

Ambuja Cements Limited, a part of the global conglomerate LafargeHolcim is one of the leading Cement Company in India. This cement manufacturing plant is situated in Ambujanagar, District Gir Somnath, Gujarat. The Aim of the company is to be the most sustainable company in our industry. And so each of our practices and process align with Environmental goal.

The Company is the first to have developed Environment Product Declaration (EPD) for PPC which constitutes over 51% of its product portfolio at Ambujanagar. The company has conducted Life Cycle Assessment (LCA) for this product using International Standards our score improved in the Dow Jones Sustainability Index (DJSI) for Emerging market in 2016 and we were benchmarked with the leading companies in the sector. Apart for DJSI, reporting, we continued our consistent reporting of Carbon emissions in the Carbon Disclosure Project (CDP) Climate Change, since 2010.

The company uses flyash and blast furnace slags as alternative raw material to produce cement that uses less energy, reduces green house effect by removing millions of the tonnes of waste materials.

The company recycles almost 96.8 % of its waste, thus reducing its environmental impacts. Strong measures are taken to discover and promote alternative use of fuel and raw materials in the company. Under its “waste to Value” programme, the company has set up a state-of-art Geo Cycle facility at Ambujanagar for pre-processing, storage, handling of different

kind of waste to produce alternative fuel. Currently approx 7 % of its fuel need is met through this alternative fuel. Geo-Cycle is a flagship programme of the company for which it has committed over Rs 100 crore. Gujarat Pollution Control Board has specifically acknowledged this effort. Company is using Petcoke (by product of Refineries) as a substitute of normal fossil fuels which resulted in increased use of low grade limestone and lower consumption of Gypsum with other alternate fuel. Limestone is main raw material in Cement industries which has an advantage of absorption of sulphur in the Petcoke. The Sulphur is absorbed in the process as calcium is the main component of the kiln feed and sulphur in the Petcoke absorbed upto 99.9 % in the clinker.

Water being recycled is 20% which implies less dependency on the surrounding communities for water. The company measures water consumption and water recharge data (through its CSR efforts) to arrive at water positivity. As a whole, it have been certified 5.5 times water positive in 2017, across all units and the best performance is reported in Ambujanagar where it is over 12 times water positive.

The company through its R&D has also developed a product Ambuja Plus, which is a high performance PPC with special performance enhance (SPE) or additives giving higher initial strength with better cohesiveness and lower water demand in concrete.



**Ambujanagar Unit Overview**



**Alternate Fuel & Raw material (AFR) Facility**

**Disclaimer:**

**Editors have taken utmost care to provide quality in this compilation. However, they are not responsible for the representation of facts, adaptation of material, and the personal views of the authors with respect to their compilation.**



## **Corporate Social Responsibility (CSR) - A Sustainable Approach for the Needs of Present and Future**

**Amruta Diwan Dixit**

Assistant Professor  
Terna Engineering College  
Nerul, Navi Mumbai

### **Introduction**

Corporate Social Responsibility (CSR) can be best explained as a way through which a company achieves a balance through integration of Economic, Environmental and Social imperatives (“Triple-Bottom-Line-Approach”) which are achieved while addressing the expectations of shareholders and stakeholders at the same time.

CSR Rules under, ‘Companies Act, 2013’ which came into effect on 1<sup>st</sup> April 2014, states that companies with a net worth of Rs 500 Cr or revenue of Rs 1,000 Cr or net profit of Rs 5 Cr should spend 2% of their average profit in the last three years on social development-related activities which are listed in Schedule VII of the Rules.

In the current scenario of Climate Change and Global Warming many companies are integrating their Management values with Environmental Conservation, Pollution Management, Waste Management and use of Environment Friendly Technologies through their ‘Corporate Social Responsibility’ (CSR) for achieving goal of Global Sustainable Development. These initiatives have become an integral part of Project Feasibility and Execution.

Below given data is based on the current Sustainability Reports, of the stated Companies which depicts their contribution towards Environmental Management through CSR Activities.

### **Tata Chemicals**

One of the companies which has integrated Environmental Management into their core business values is ‘Tata Chemicals’. Tata Chemicals Limited (TCL) owns and operates its chemical plant at Mithapur in Saurashtra region of Gujarat state in India and is involved in large scale production of salt, soda ash and other marine chemicals. One of the biggest challenges being faced by TCL is to combine sustaining a high growth rate with improving the lives of the poor and marginalised communities around whilst not compromising on environmental conservation and restoration.

They have been spending more than the 2 per cent of the profit, irrespective of the market capital gain. ‘Wildlife Conservation’ accounts for 30 per cent of the budget of the Tata Chemicals.

### **Environmental Conservation**

Since most of the TCL’s plants are located near shores, their CSR Program named as, “Dharti ko Arpan” involves Nature

Conservation Projects like Whale Shark Conservation, Coral Reef Restoration, Mangrove Regeneration, Biodiversity Reserve Plantation, Marine Turtle

Monitoring, Community Conserved Wetland, Monitoring of Birdlife etc.



Whale Shark Conservation Project



Biodiversity Plantation Project



Coral reef Restoration Project

(Image source: <http://sustainability.tatachemicals.com/>)

For improvement marine conservation in Gujarat (Mithapur), Tata Chemicals have signed a Memorandum of Understanding (MoU) with Wild Trust of India on International Whale Shark Day, 30 August, 2014. A total of 490 whale sharks were rescued from the year (2014) taking the total rescue figure till date to 490.

Project 'Whale Shark' supported by TCL is India's only attempt to generate baseline data on the Whale Shark (endangered species) to aid its long-term conservation, involving general awareness and scientific studies through photo-identification, genetic analysis and satellite tagging.

Another strategic partnership MoU with Gujarat Government for the Whale Shark Conservation and Mithapur Coral Reef Restoration projects was signed in January 2015 at Gandhinagar as part of the Vibrant Gujarat Summit.

'Mithapur is host to a 150-acre botanical reserve for the conservation of native flora. This ex-situ conservation attempt by TCL is home to an exclusive 30-acre plantation of the endangered Gugal (*Commiphorawightii*) plant.

#### **Adani Power Plant**

"Adani Power Limited" is the power business subsidiary of Indian Conglomerate Adani Group. The company is India's largest power producer and is committed

towards the energy conservation and environment while addressing the nation's energy requirements.

#### **Super-critical Technology**

The biggest milestone achieved by 'Adani Power' is creation of India's first super-critical technology based 660 MW generating thermal power unit at Mundra, Gujrat. The Supercritical power plants operate at higher temperatures and pressures, and therefore achieve higher efficiencies (above 40%) than conventional sub-critical power plants (32%). It also leads to significant CO<sub>2</sub> emission reductions (above 20%) and helps conserve coal. They have also taken initiatives like Installation of energy efficient LED lighting, Optimizing their auxiliary power consumption, implementing VFDs (Variable frequency drives), improving combustion efficiency and minimizing system leakages.

Green zone Development and Waste (Flyash) Management APL desires to become one of the greenest power plant in the country. The Green Zone development which includes 25845 trees, 392250 shrubs and 28785Sq.m green carpet with a survival rate of more than 90% in highly saline soil base dredged from the sea. Productive Green zone helps in reducing CO<sub>2</sub> emissions. For prevention of water wastage they have adopted Israel's Hi-Tech



mechanized sprinkler irrigation systems and also the latest system of underground drip irrigation to deliver water directly to the roots to avoid water loss through evaporation. This system reduces irrigation water usage up to 80%. They also utilize treated STP water in irrigation & treated sludge into manure in Green zone development to minimize wastage of water. Flyash, which is the waste product of thermal power industry is also put up to the best use in vermi-compost by APL. It helps in enriching soil without the use of artificial

fertilizers, efficient conversion of organic wastes/crop/animal residue, reducing population of pathogenic microbes and stabilizing and enriching soil. Flyash serves as economically viable and environmentally safe nutrient supplement for organic food production.

All the organic waste at APL plants such as kitchen waste, agriculture waste, etc. are used to create soil enriching vermi-compost.



**Green Zone development**



**Verrmi-compost**

(Image source: <http://www.adanipower.com/sustainability/environment>)





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## ADMISSION NOTIFICATION

### Post Graduate Diploma in Sustainable Environment Management (PGDSEM) Academic year 2018 – 19

Environmental management techniques are integral to conservation, agriculture, forestry, industry and countryside planning. This part time autonomous course is designed for people already in environment-related employment, who wish to develop their careers by updating their knowledge and skills. It aims to satisfy an industrial and public sector demand for environmental management personnel.

**Eligibility:**

B.Sc./B.E./B.Tech. with work experience from government, industries, consultancy and NGO in field of environment management. Diploma holders with 1 year of Job experience.

B.A./B.Com./B.Arch (Non- Science background) working in the field of environment management (Candidates from non- science background are eligible with Foundation Course on Sustainable Environment Management offered by our Institution).

**Duration:** 11 months- Part Time



#### COURSE HIGHLIGHTS

- Highly experienced faculty
- Industry centred curriculum with emphasis on hand on practical experience
- Interdisciplinary approach
- Innovative pedagogy
- Focus on innovation through project activities and entrepreneurship
- Linkages with various stakeholders like industry, consultancy and Govt. dept.
- Focus on improving individual skills
- Exposure to workshop, conferences and seminars
- Specialized library
- Industrial visits



- Application forms can be collected from SIES IIEM office or can be downloaded from the website and submitted with DD/cash of Rs.500/- in favour of The Director, SIES-IIEM, payable at Nerul.
- Commencement of sale of brochure and admission form: May 2018
- Last Date for the submission of application forms: 1<sup>st</sup> week of July 2018



## **Corporate Social Responsibility and Sustainable Environment**

**Hari Prakash Srivastava**

PGDSEM, Semester – I

SIES Indian Institute of Environment Management  
Nerul, Navi Mumbai

India has a history of having a compassionate attitude towards environment. A concept known as corporate social responsibility emerged in the light of right to pollution free environment and the constitutional duty to protect and improve the environment.

India is a welfare state. But with the passage of time Indian government has adopted liberalization, privatization and globalization. Public sector has slowly shifted to private one. Therefore, the new concept of Corporate Social Responsibility [CSR] means a corporate sector shall perform such welfare function towards society which is necessary for maintaining the social interest of the society. The

2016 began with tremendous anticipation as the Paris agreement had been signed. There is hope that the landmark event of India ratifying the Paris accord in 2016 will bring in the much needed acceleration to India's sustainability journey.

Today, business are becoming proactive and trying to de-risk themselves from charges of negligence. Threats to companies are coming from all directions. On one side are environmental factors such as absence of water or key materials that affect production. On the other side social factors

corporate social responsibility encompasses the economic, legal, ethical, and philanthropic expectations placed on the organizations by the society at a given point of time.

With the passage of the Companies Act, 2013 the mandate for corporate social responsibility (CSR) has been formally introduced to the dashboard of the Boards of Indian companies. The industry has responded positively to the reform measure undertaken by the government with a wide interest across the public and private sector, Indian and multinational companies. Building a society which provides equal access to opportunities negates disparities and, is a collective responsibility.

such as human rights, livable wages, working conditions, economic inequality and other issues are raising their head. As a result, social and environmental issues, once seen as separate, are coming together inside some companies.

The coming year will present an opportunity for companies to align efforts around intergovernmental initiatives such as Sustainable Development Goals (SDGs) will put increasing pressure around very specific targets.

## 1. The push for a cleaner environment

When the Swachh Bharat Abhiyaan was launched 3 years back, many viewed it with skepticism. It has brought the discourse on cleanliness to the mainstream. Companies have allocated funds to this campaign and built toilets or helped in cleaning up of

allocate space to the need to build public toilets, garbage burning, littered roads and even large public events that cause environmental damage and filth. In part, this has also been led by larger public awareness due to health hazards of water and air pollution.

### The Companies Act 2013 mandates that from 1 April 2014, larger companies will:

- Be required to spend at least 2% of the previous 3 years' average net profit on CSR activities on projects or activities from a set list of possible activities (see Schedule VII to the Companies Act 2013);
- Be required to 'comply or explain' the expenditure and any shortfall below the 2% threshold
- Set up a CSR committee of the board of 3 or more directors, whose members will include at least one independent director
- Ensure the board establishes a policy for CSR within the company and will report on the CSR activities..

### Model Environmental Policy

- The company's commitment towards is absolute. The company believes in sustainable development by ensuring that the activities are in harmony with environment. The company in the process of various steps of manufacturing is committed to achieving excellence in environmental performance and towards this objectives shall:
- Adopt appropriate operational practices and suitable technologies to monitor, control and minimize the impact of its activities on environment.
- Continually improve its performance by setting the objectives and targets to prevent or reduce pollution and waste and minimize the use of resources
- Comply with all relevant legislative and regulatory environmental requirements.
- Develop and maintain a highly motivated workforce trained for effective management of environment and emergency situation.
- Provide relevant information on environmental policy to the concerned authorities and interested parties and ensure that the policy is understood, implemented and explained by the employees at all levels within the organization.
- Evaluate and modify environmental management practices keeping in view regulatory requirements, community concerns and technological advancements

### **Section VII of the Companies Bill has considerably widened the ambit of CSR activities which now includes and includes ensuring environmental sustainability**

public spaces. Major newspapers now

## 2. CSR as strategy and not charity

Since CSR investments need appropriate disclosure and need to be done every year, 2016 saw many companies holding back CSR funds if they didn't find appropriate

projects. Less than 4% of CSR funds spent by top Indian corporates was given as charity. Companies are now looking at methods to add strategic brand value related to the business they are in, as required by law.

### 3. Zero impact moves to Net Positive

Most companies are moving towards creating sustainable growth models in different ways. As manufacturing companies explore the inter-linkages of supply chains it is evident that waste, water, energy and materials are closely linked to business continuity. There is a growing realization that growth without adversely impacting the environment is now an expected goal.

### 4. Water begins to take center stage

Droughts and water shortages in one area and extreme floods in other parts were part of the ongoing discourse around Indian cities and villages in 2016. Companies have had to increasingly gear up to the challenges this has posed. From stopping operations and facing large scale damage in flooded areas to sourcing water trucks for employees and regular manufacturing operations, water is now becoming a significant risk factor. Corporate sustainability reports, are now speaking of water at two levels – as part of CSR initiatives for communities and as part of company operations.

### 5. Renewables gather momentum

With the Paris accord in play, companies will need to pitch in, in a significant manner for India to achieve the NDC (nationally determined commitment) of emission cuts by 33-35%. Hence it is expected that companies would focus more and more on renewables with a strong focus on solar, biofuels and wind. Off the grid energy systems are likely to provide succour to remote areas, which remain deprived of electricity supply. This is likely to gain strength with developments in energy storage. Improved storage will also help

corporations move towards renewable energy for their own consumption. Corporations will increasingly engage with the government in policy making and contribute towards an effective public-private partnership on renewables.

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- Corporate Social Responsibility and Sustainable Development in India; Pankaj Dodh1, Sarbjeet Singh2 and Ravita3; ICCP&PT, School of International Studies, JNU, New Delhi, India.2,3Department of Economics, Punjabi University, Patiala-147002, Punjab, India.

## Corporate Social Responsibility : Some Case Studies from Industries



**Rozina Rupani**

PGDSEM Semester- I  
SIES Indian Institute of Environment  
Management, Nerul, Navi Mumbai

Corporate Social Responsibility (CSR) is an initiative of the government that is clearly enhancing and weaving the culture of “doing social good” into the fabric of India. India is steeped in rich culture, be it mythology, tradition, Ayurveda or Yoga. Today, CSR is a dimension that only a handful (or less) number of countries in the world have implemented. The strategy drives (and also enforces) the social conscience of corporates to share of their profits for wider good. A tremendous amount of change at the grass root is available as evidence of CSR. As part of their CSR mandates, two corporates that have chosen to work towards enhancing the quality of the environment are DLF Foundation and Intex Technologies. Below is an account of their work on the ground.

### **1. DLF Foundation installs Air Quality Monitors**

Air pollution is an alarming concern worldwide and has been linked to respiratory diseases like asthma, bronchitis and lung cancer.

In a bid to ensure better air quality, state-of-the-art and highly accurate Air Quality Monitors have been installed across four

locations in Gurugram phase 1-5. Initiatives of DLF Foundation as a part of Gurgaon Rejuvenation Project, these devices monitor the air quality 24\*7. The monitors installed are smart air monitoring devices with high efficiency. They can measure PM 2.5 along with temperature, humidity and transmit real-time data through the cloud. The will clearly provide deep insights into patterns of air pollution across different locations in Gurugram, identify trends that lead to higher pollution in certain areas and also understand localized impact and causes of pollution. DLF Foundation would be releasing the DLF Air Quality Index at a regular interval of time.

In the next phase of this initiative, DLF Foundation plans to extend the air quality monitoring to more zones in Gurugram in order to make DLF Air Quality index an effective tool in combating pollution at a citywide level.

Despite the Supreme Court’s ban on crackers, this Diwali, air quality in Gurugram deteriorated by over five times around Diwali. According to Haryana State Pollution Control Board, the Air Quality Index (AQI) value for 24 hours in Gurgaon was 365 micrograms per cubic metre (ug/m<sup>3</sup>), which falls into the category of ‘very poor.’



## **2. Intex Tech launches E-Waste Campaign at Jaipur**

A study by Assocham and Frost & Sullivan says that India generates about 18.5 million metric tonnes (MT) of electronic waste every year. This figure is expected to reach up to 30 lakh tonnes per year by 2018, growing at the rate of 25% across India as per the internal processes and for end-to-end recycling.

Intex Technologies, has launched a pan-India E-Waste Collection campaign named GO GREEN from the Pink City of Jaipur. Intex, being an electronics manufacturer, under its GO GREEN campaign and in line with E-waste (Management) rules, 2016, will stipulate phase wise collection of e-waste items, beginning with at least 30% of estimated waste quantity during first two years and gradually moving up to over 70%. Intex has also established 84 E-Waste Collection Centers in Rajasthan with 11 centres in Jaipur city.

For the PAN-India collection mechanism, Intex has partnered with a prominent recycling company – Exigo Recycling. The Recycling Partner has been given clear mandates for the state of Rajasthan as well

Alongside, Intex is also organizing mass awareness programmes on e-waste management and safe disposal of electronic waste at schools, colleges, residential societies and institutions. To encourage people to participate and give out e-waste items, Intex is giving special offers on its entire product portfolio available at Intex SmartWorld stores.

Supporting partners of this drive are, PHD Chamber of Commerce, Rajasthan Pollution Control Board and Rotary Club – Jaipur that also campaign for a healthier environment and society.

## **THE ENVIRONMENT MANAGEMENT' NEWSLETTER IS MARCHING AHEAD.....**

### **Vol.1**

- **Issue 1, October – December 2015, Theme: Environmental Monitoring and Assessment for Pollution Control**

### **Vol. II**

- **Issue 1: January – March 2016, Theme: Natural Resources and their Management**
- **Issue 2: April – June 2016, Theme: Environment Management for Sustainable Development**
- **Issue 3: July – September 2016, Theme: Water Treatment Technologies**
- **Issue 4: October – December 2016, Theme: Environment Management and Sustainability**

### **Vol. III**

- **Issue 1: January – March 2017, Theme: Wetlands: Conservation and Management**
- **Issue 2 : April – June 2017, Theme: Green technologies in pollution control and management**
- **Issue III : July- September, Theme : Wealth from the Waste**
- **Issue IV : October- December, Current issue**

All previous issues of 'The Environment Management' can be viewed at:  
[http:// www.siesiem.edu.in](http://www.siesiem.edu.in)

## **REPORT ON GRADUATION CEREMONY For**

### **Post Graduate Diploma in Sustainable Environment Management 2016-17 Batch**

Graduation Ceremony for Post Graduate Diploma in Sustainable Environment Management 2016-17 Batch was organized on 8<sup>th</sup> October 2017. Around 30 members including students and faculty members were present during the event. Mr. Dinkar Aadhav, Director, Ramky's Mumbai Waste Management Limited, was the Chief Guest for the event. Mr. Somnath Malgar, Head, Waste Management Division, Mumbai Waste Management Limited, Ramky was also present during the event. From SIES Management Council member Mr. S.V.Viswanathan was present.

Certificates were distributed to the students of PGDSEM 2016-17 batch. It was a proud moment for all faculty members of IIEM to announce the name of topper of the batch, Mr. Mahesh Subramanian, who received Shri Ramaswamy R. Iyer Endowment award along with a Draft as token of appreciation.



**Mr. Mahesh Subramanian receiving the endowment award**



**Outgoing and present students**

## Report on AIR-O<sub>2</sub>-THON

2nd International Summit of Air-O<sub>2</sub>-Thon series that started in Delhi in October 2017 second edition took place in Mumbai on 30<sup>th</sup> November 2017 at Victor Manzees Convention Centre, IIT Bombay. The conference was organised by Prospur, co organised by Indian Pollution Control Agency (IPCA), New Delhi and supported by SIES Indian Institute of Environment Management (SIES IIEM), Nerul, IIT Bombay and NITIE, Mumbai. The summit has focused on the evaluation on the technological interventions and the awareness status of people. The expert panel in the conference discussed about Indoor and outdoor air quality and its threatening effects on health. The panel also evaluated the various technology and innovation which helps to improve the air quality and minimize the associated risk on individual health. Inauguration of the 2nd edition of air-o-thon international summit was done by watering an indoor plant.

The opening remarks were by Dr. Prasad Modak on Indoor Air Quality management in the form of presentation covering prevention, monitoring and control. The sessions covered prevention of indoor air pollution, air quality monitoring and health and air quality management / control in that experts from IIT Bombay, CSIR NEERI, Nagpur, University of Delhi, Urban Emissions, ICMQ India Certification Pvt. Ltd., GBCI, Asian Paints, Blue Star etc. have deliberated on various issues. The first session on prevention on Indoor air pollution was moderated by Dr. Seema Mishra, Director, SIES IIEM.



**Inauguration of the Summit**



**Moderation of the session by Dr. Seema Mishra**



**SIES IIEM team at AIR O<sub>2</sub> THON**



## Report on PRAKKATHAN 1.0 : A Student's Eco Fest on Sustainability

Prakkathan 1.0: the first edition of eco-fest on sustainability by the students of SIES IIEM towards spreading the word of sustainability to all the fellow students of Mumbai. It was a tiny step towards a bigger dream. the students would like to achieve but its ideas were strong enough to find support from sponsors. The sponsors for the event were JSW Steel, Anglo Eastern Maritime Academy, Environmental Policy Research Institute, Rutvij Salunkhe and Creative Constructions.

The fest was one day event in which about 60 registrations have been recorded from different colleges of Mumbai and Navi Mumbai. It was inaugurated by Dr. Prasad Modak.

The main attraction of the event was the first Prof. P.K Khanna Memorial Talk.that was presented by Dr. Modak on the topic, **'Sustainability is a matter of survival not choice'**. The other events during the fest were film jatra, quiz, debate and photography competitions. A puppet show was organised by the students of SIES Nerul Institute of Comprehensive Education in valedictory session in which awards were given to the winners of different competitions by Dr. S. V. Viswanathan, Member, Managing Council, SIES.



**Dr. Modak delivering Prof. Purushottam Khanna Memorial Talk**



**Presentation of citation**



**Audience sitting in rapt attention**



**Student's participating in the quiz competition**



**Puppet show**



**Team Prakkathan**

## Environment in News Headlines

### Global climate observatory from space

In One Planet Summit in Paris, the world's space agencies have proposed the creation of climate observatory to pool acquired data and share with scientists around the globe to monitor greenhouse gases, water resource management and the use of satellites during disasters.

Source: AFP, Dec. 13<sup>th</sup> 2017

### Whale on the verge of extinction

North Atlantic right whales are among the rarest mammals in the world. The year 2017 was deadly for the endangered right whales in the North Atlantic Ocean. Poor reproduction during the year as well as high rate of mortality has reduced mammal's population that alerts authorities to plan seriously for their conservation.

Source: AP, Dec. 10<sup>th</sup> 2017.

### Energy efficient LED are escalating light pollution

The artificially lit land area has gone up by 2.2 per cent on average from 2012 to 2016. The GFZ German Research Centre for Geosciences in Potsdam, Germany has observed stable night brightness in 39 countries of the world which is not good for human or animal health as it disrupts circadian rhythm, depression, diabetes and even cancer. The scientists corroborated this to the 'rebound effect' of energy efficient technologies especially LED light that was installed in large number as is cheap, efficient and offsets energy saving to some extent.

Source: Science Advances, 2017.

### Antarctica's biodiversity is threatened

At present the ice free areas in Antarctica are around 1% that supports 99 percent of its biodiversity. As per a research paper published in the journal Nature, the ice free areas in Antarctica could increase to 25 percent by 2100 if current trend of emission of greenhouse gases continues to rise. Due to this, some of the native plant and animal species of the continent may move to newer areas, invasive species could spread and extinction of less competitive native species is predicted by the authors. Additionally, researchers have reported about 5 meters of ice melt in the region by 2100.

Source: Nature, June. 30<sup>th</sup> 2017

### Air pollution, dust decreases the efficiency of solar energy panels

Dust accumulating in solar panels with air borne particles could reduce the efficiency of solar energy production. Samples taken from the accumulated dirt showed that it is composed of 92 percent of dust while remaining fraction was composed of carbon and metallic pollutants from humans. It was observed that the efficiency of solar panels increased by 50 percent every time after the cleaning of the panels. Some areas of the world may suffer great loss in solar energy production due to dust and air borne pollutants, especially in arid regions such as Arabian Peninsula, Northern Indian and Eastern China. Regular cleaning of panels is very important to maintain the efficiency of solar panels.

Source: Nature World News, June 2017

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### Forthcoming Events

**Alumni Meet on 6<sup>th</sup> January, 2018.**

**Seminar on Emerging Trends in Sustainable Environment Management in March 2018.**

Articles, photos etc. are invited for next issue IV : Volume 1 (January - March, 2018) of the Newsletter on the theme '**Green Jobs for Sustainable Environment Management**'.

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