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Focus: Environmental Sustainability

one of the most dynamic economies in the world today, India's material consumption is growing and expected to triple by 2030, over consumption in 2009. India's material demand in 2010 was the third largest in the world, with extractions amounting to about 7% of global raw materials extracted that year. Owing to higher disposable incomes, India's material requirements are projected to be 15 billion tonnes by 2030, at current rates of growth, and 25 billion tonnes by 2050,

with fossil fuels, minerals and metals accounting for the largest increases.

The Global Resources Outlook report 2019 suggests that decoupling business success from resource use requires both immediate resource efficiency and circularity measures, as well as strategies to change market systems beyond the limits of a company. These measures have the potential to reduce resource extraction by 25% and boost the economy by 8% by 2060.

In a circular economy, maximising utility *****

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of natural resources (resource efficiency) and retaining value along the life-cycle of products are both goals of the private and Government sectors, and are seen as strategies to boost competitiveness; these would occur through changes in product/process design, strongly supported by innovation, new business models and technology.

The Government of India has recognized these imperatives in its new industrial policy which lays down 'Establishment



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CEO Speak...

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Message from DG





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of a Circular Economy (CE)' as a policy objective.

Some national-level missions which are already operationalized and synergized with CE principles are: Startup India, the Ease of Doing Business reforms and Make in India (including establishment of industrial corridors). These provide points of take-off and alignment with the transition towards a CE.

With specific reference to resource efficiency (in terms of domestic material consumption intensity) although India's performance had improved in 2016 (at 2.83 kg per US dollar) from what it was in 2000, it was behind the value of 2.09 kg for the Asia-Pacific region, and 2.39 kg for south and south-east Asia.

To meet the twin goals of securing resource availability and shift towards sustainable consumption and production in pursuance of the UN's Sustainable Development Goal 12 (of the 2030 Agenda for Sustainable Development), the Indian Government set up an Indian Resource Panel in November 2015.

In June 2018, the Ministry of Environment, Forests and Climate Change (MoEF&CC) set up a Resource Efficiency Cell whose objective is to provide a platform to mainstream resource efficiency in public policy through coordinated inter-ministerial action. The Cell will prepare a resource efficiency policy for India and coordinate sectoral policies and regulatory mechanisms. A draft policy is ready and is in the public domain for comments. The NITI Aayog together with the MoEF&CC has released four strategy papers on resource efficiency and circular economy in the steel, aluminium, construction & demolition and e-waste sectors.

CII has been active in this domain for several years. Recognizing the importance of data-backed policy making, we have recently completed a study on resource efficiency in the Pulp & Paper and Iron & Steel sectors with the objective of evaluating the potential for RE/ CE and its benefit to Climate Change mitigation.

CII is of the view that policy changes involving financial incentives, education and research, standards and certification, and public procurement, for example, can nudge a move in the right direction, and cascade throughout the economy. Overall, Industry can be facilitated in leading the transition through investment and innovations in new technologies; new metrics; business model innovation; eco-design; waste-as-aresource business models with and finance mechanisms for innovation and innovation in policy.

CII is ready to extend a hand to companies across industry sectors seeking an analysis of business portfolios with respect to resources and make adjustments to their business strategies.

Chandrajit Banerjee

Director General Confederation of Indian Industry



Effective Climate Action Requires Looking Into Value Chains

It is a known fact for businesses around the world that climate change will create challenges in resource availability. According to you, how is resource efficiency related with climate change mitigation?

The potential contribution of resource efficiency to climate change mitigation has recently come into focus. Resource efficiency is a matter of achieving improved outputs with fewer inputs. We know that industries have gained good momentum in energy efficiency already, but parallelly the material-counterpart of energy efficiency, i.e. resource efficiency, also needs momentum. In a recent study by the International Resource Panel, the overall potential and implications of resource efficiency was investigated, and it was found that resource efficiency could reduce the use of natural resources globally by 28% and greenhouse gas emissions by up to 20% in 2050, compared to a reference scenario¹. Along with environmental benefits, this will clearly help in cost savings as well. This is a huge opportunity that industries around the world should start working on.

It is clear that the nexus between climate change and resource efficiency needs to be understood and necessary actions need to be taken. In your opinion, what is the best way to raise our ambitions and re-orient our strategies to bring the required changes in the way we use, produce and consume materials, resources and products?

Businesses need to understand that resource efficiency should be a core strategy in every sector. Especially in the manufacturing sector, resource efficiency is necessary to stay competitive, to reduce import dependency, create value from closing material cycles, and reduce

1 www.unep.org/resourcepanel



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negative environmental impacts associated with the primary production of materials. Organizations are already facing various challenges like rising fuel and energy prices, rising cost of resources, low yield

and high wastage, lack of technology knowhow, etc. It is necessary that resource efficiency is made an integral part of climate policy. Globally, companies have adopted solutions like being energy and resource efficient in processes and operations, adopting cleaner production, lean manufacturing etc. Sustainable use of raw material, energy, chemicals, water and other inputs are also necessary which is linked with circular economy and will help in cost savings, quality improvement, productivity enhancement and enhancement in organizational efficiency.

Limiting global warming to well below 2 degrees centigrade by 2100 requires climate action to go far beyond incremental improvements. What kind of strategies and policy interventions need to be taken care of when we talk about resource efficiency and climate change?



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Circular economy provides an attractive opportunity for climate change mitigation by bringing required systemic changes and addressing excessive resource use and greenhouse gas emissions. A gap report by UNEP confirms that just focusing on renewables and energy efficiency limits our focus on designing a low-carbon future. Firstly, it is necessary to bring about behavioral change in the production system of take-make-waste model to a system which makes more efficient use

climate action requires looking into value chains. By advocating for effective and smarter resource use, circular economy encourages coordinated efforts to reduce emissions in all parts of the value chain which get extended as far up as the mines, quarries, wells, fields, and forests where our resources are born. Thirdly, it is necessary to understand the needs that our products and materials satisfy and then explore new ways to address them. This can be done by substituting carbon-intensive materials with of available resources. Secondly, effective ***** low-carbon alternatives, improving the use of existing assets, etc. Finally, it is necessary to find ways to discourage resource extraction and encourage efficient use of resources. Similar to the concept of putting a price on emissions, a tax on resource use should also be looked at. Globally, many organizations have come in support of this idea² and this will encourage circular economy where resources are effectively used leading to lesser emissions.

2 https://www.accaglobal.com/content/dam/ACCA_ Global/professional-insights/Tax-as-force-for-good/ pi-environmental-tax.pdf

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CEOSpeak





Key CII Recommendations for Environmental Sustainability

Circular Economy, Resource Efficiency and Sustainable Public Procurement

Policies and legislation in India, at present, are aligned to the prevalent linear model of production and consumption. A conducive regulatory framework, including financial, tax-based incentives, can bring about a transition to circularity through systematically applied policy changes. Public policy should send the signal for economy to be nudged in the right direction through market incentives, public procurement, subsidies and prices. These can be extended to cities and local bodies also beyond resources and processes.

CII is of the opinion that ownership of the Circular Economy (CE) agenda should be held by the Department of Promotion of Industry and Internal Trade, spearheaded by Industry. It should be recognized primarily as an economic activity with benefits to the environment and society. Voluntary adoption of CE by Industry could be promoted by encouraging new business models (specific reference to businesses in reverse logistics, supply chain innovations) which will add value to shareholders, generate employment and enhance customer experience, all at the same time increasing the efficiency of resource-use. Exemptions of GST can be worked out for processes using secondary or recycled materials as an incentive.

Since a number of ministries will be involved in policies of other ministries with respect to resource/material use, conserving value in products and cycling through closed loops, should be dovetailed into an overall CE policy; ready synergies already exist in the following national-level missions: Start-up India, Ease of Doing Business reforms and Make in India.

Supportive public procurement policies can support the purchase of products designed with a view to circularity and amenable to refurbishment, recycling and repair. In the area of Resource Efficiency (RE), a scheme similar to the Perform-Achieve-Trade scheme for energy efficiency, investments in Industry (and services) leading to resource-use efficiency should be identified and encouraged; targets similar to those for energy efficiency, already in place in India, could be adopted. This would be particularly relevant for minerals/metals/resources where shortages are identified, or imports are large in areas/products with a significant consumption.

The move towards implementing Sustainable Public Procurement (SPP) has been recently revived and will be a good channel to promote green growth throughout the economy. As a component of CE practice, SPP is rightly anchored in the Ministry of Finance, Department of Expenditure. A stepby-step approach should be used, starting with considering products, services or work based on their environmental impact. Clear and precise technical specifications should be drawn up using environmental factors, and technical criteria used as the basis for selecting products. Categories to be shortlisted could be low-hanging fruits; high purchase product categories; products where initiatives towards greening have already been taken and where technology is established. Vital components of an exercise promoting sustainable public procurement are training manpower and capacity-building, awareness-raising activities and coordination among the ministries since inputs will be needed from Government organizations/ departments dealing with environment, energy, water and agriculture.

Waste Management

Rapid increase in population and economic development has led to severe environmental degradation that undermines the environmental resource base upon which sustainable development depends. The economics of environmental pollution, depletion and degradation of resources has in fact been neglected as compared to the issues of growth and expansion. India has been no exception to this worldwide phenomenon.

Industrialization has resulted in the generation of huge quantity of wastes, both solid and liquid, in industrial sectors such as sugar, pulp and paper, fruit and food processing, sago / starch, distilleries, dairies, tanneries, slaughterhouses, poultries, etc.

On one side where waste generation in India has gone up considerably, the infrastructure required to collect and process the waste remains is lagging, thereby creating a huge problem of waste disposal. Absence of source segregation has compounded the problem. Industrial units simply dump their waste, more often toxic and hazardous, in open spaces and nearby water sources. According to Central Pollution Control Board (CPCB), only 27% of the total collected waste is being treated and remaining waste is sent to landfills which creates a burden on the environment. Unmanaged waste is not only an environmental but also a health hazard besides being an enormous waste of resources.

In an effort to address the issue of waste management, a number of regulations such as Hazardous and Other Wastes (Management and Transboundary Movement) Amendment Rules, 2019, E-Waste (Management) Amendment Rules, 2018, Plastic Waste Management (Amendment) Rules, 2018, Batteries (Management and Handling) Amendment Rules, 2010, Construction and Demolition Waste Management Rules, 2016, Solid Waste Management Rules, 2016 and Bio-Medical Waste Management (Amendment) Rules, 2019 have been notified by the Ministry of Environment, Forest & Climate Change (MoEF&CC).

To tackle the menace of waste, CII recommends 'Zero Waste to Landfill (ZWL)' philosophy, which aims to prevent any waste material being disposed to landfill, in turn offering a more sustainable route for future generations. ZWL works on the principle of 5Rs - Reduce, Reuse, Recycle, Reprocess, and Recover. Eliminating or reducing waste at

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source is the best way of minimising the environmental impacts of our activities and creating opportunities for savings. Further, it is very important to identify the 'waste' as a 'resource' or a 'material'.

A zero waste strategy supports 'triple bottom-line' in terms of economic, social as well as environmental well-being. Economic well-being is enhanced by waste elimination and improved production efficiencies. Environmental protection is promoted through elimination of waste material being returned to nature. Social well-being is heightened through improvements that safeguard society's scarce resources better, as well as through the creation of new jobs in the 'closed-loop processing' associated with reuse, recycling and reprocessing of materials.

Plastic Waste Management Rules, 2018

Producers under Plastic Waste Management (PWM) Rules 2018 are supposed to undertake EPR for collection of plastic waste. Towards this, Industry is undertaking a handful of initiatives, however the required scale is yet to be achieved, given the quantum of waste being generated.

Therefore, to bridge the gap between Industry and Government, CII partnered with MoEF&CC to organize regional consultative workshops on Waste Management Rules for seeking inputs from wider stakeholders. Basis the inputs, the draft National Framework was submitted to the MoEF&CC, and it is under consideration.

Also, the effective implementation of Extended Producer Responsibility (EPR) by Producers/ Importers/Brand owners (PIBOs), can only be ensured through public-private partnerships. As per the PWM Rules 2018, PIBOs are directed to prepare their action plan involving state urban development departments.

Since EPR implementation requires stocktaking by the State Government for its action plan on plastic waste management, there is a need of creating a state specific multi-stakeholder working group to identify key operational and governance challenges and respective solutions.

CII has partnered with Government of Tamil Nadu for ensuring effective Implementation of EPR for plastic waste management in its State. CII has recommended to identify statelevel governance mechanism for facilitating EPR implementation and monitoring. Also, state action plan should be prepared for implementation of EPR in the State, which would have brand neutrality and geography neutrality at its core.

Green Competitiveness -Building Climate Resilient Industry

With Industry as a key player, India is poised for higher economic growth in next decade. OECD has forecasted that the combined GDP of China and India will exceed that of combined G-7 nations (the world's richest economies) by 2025 and be 1.5 times larger by 2060¹. With GVA of Rs 50.43 lakh crore, Industry sector contributes 29.73% of total India's GVA of Rs 169.61 lakh crore in 2018-19². According to the CIA Factbook, GDP of Indian Industry is USD 560.97 billion and India stood at 6th rank in the world in 2017. However, the contribution of Indian Industry to world economy is lower than world's average i.e. 30% of GVA. Hence, remaining competitive in global market will rely heavily on adequate infrastructure, faster advanced technology adoption, easy access to finance, adequate investment in R&D and innovation and to equip for frequent regulatory fluctuations which will be addressed in the new Industrial Policy (right now at a draft stage).

Competitiveness of Indian Industry can face a big hurdle in the form of climate change. Climate change could shave off 2.8% of India's GDP and depress the living standards of nearly half its population by 2050, said a World Bank report released in 2018³. With India close to the equator, the major industrial regions of Vishakhapatnam-Guntur, Bengaluru-Chennai and Kollam-Thiruvananthapuram will see much higher rises in sea levels because of lower latitudes. This will lead to saltwater intrusion in industrial belts, degrading groundwater quality, contaminating drinking water causing cholera outbreaks, and also the loss of physical assets existing near coastal regions⁴, and that increases the premium cost of insurances. The physical impact of climate change and indirect impact due to changing market preference can also impact many key Indian industries.

Though, India's domestic industrial policy talks about sustainability, but without giving a thrust to climate impacts and adaptation strategies very clearly. Therefore, a clear industry-specific climate adaptation policy can help increase competitiveness of industries and supply chains by promoting climate-smart solutions and clean technology development through innovation. Policy emphasis should be on identifying vulnerable sectors (which are energy-intensive and exposed to international competition) and buffering them against acute effects in the short term. The climate change impact on competitiveness for vulnerable sectors (such as iron-steel, agro-chemicals, etc) can be offset by well-designed compensation schemes⁵.

Challenges for Businesses in Implementing the Biodiversity Act

India is a treasure chest of biodiversity and accounts for 8% of the total global biodiversity. It harbours 4 biodiversity hotspots and hosts a large variety of plants. India has been identified as one of the eight important 'Vavilorian' centres of origin and crop diversity. At the global as well as at the national level, biodiversity loss is a major challenge due to various development activities and major dependency on agriculture production. Biodiversity plays a critical role in livelihood and sustenance of livelihood and health of the planet. To address the challenges of biodiversity loss at a global level, UN Convention on Biological Diversity (CBD) has been constituted with an objective of biodiversity conservation, sustainable use and fair and equitable sharing of the benefits arising out of the use of genetic resources and traditional knowledge.

India is a party to CBD and to meet the objectives of CBD, it has enacted the Biological Diversity Act in 2002 and

¹ https://www.scmspune.ac.in/chapter/Chapter%203. pdf

² http://statisticstimes.com/economy/sectorwise-gdpcontribution-of-india.php

³ https://www.thehindubusinessline.com/economy/ climate-change-can-cost-india-28-of-gdp-by-2050world-bank/article24282307.ece

⁴ http://www.worldbank.org/en/news/ feature/2013/06/19/india-climate-change-impacts

⁵ https://esrc.ukri.org/news-events-and-publications/

evidence-briefings/the-impact-of-climate-changepolicy-on-competitiveness/



Biological Diversity Rules in 2004. Further to this, India adopted Nagoya Protocol (2014) to CBD and released the Guidelines on Access to Biological Resources and Associated Knowledge and Benefits Sharing Regulations, 2014, popularly known as ABS Guidelines, 2014. In 2019 a revised draft of ABS guidelines has been released.

This act and guidelines are of relevance to businesses and research organizations associated with the sectors of agriculture, food processing, spices, ayurveda, seeds, etc that use biological resources and or traditional knowledge. However, in implementation of this act and guidelines, businesses are facing multiple issues which can be resolved by addressing the following aspects and accordingly modifying the regulations:

- There is a need to develop sector wise approach for the implementation of the BD Act and ABS regulation.
- Adopting a Single Window clearance system for application to businesses - Currently the application for Indian businesses sourcing Biological Resources (BR) in many cases is state-wise through State Biodiversity Boards (SBBs). This is challenging for businesses that have more than one sourcing location.
- Normally Traded as Commodities (NTAC) listed plants/items that are being widely used commercially should be exempted.
- Clarification of definitions and interpretation of the Act and guidelines is the need of the hour. Businesses are facing the challenge of the Act being interpreted differently at National Biodiversity Authority (NBA) level and State Biodiversity Boards (SBBs) level.
- ABS should be applicable to the finished product manufacturer, rather than entire supply chain.

Cleaner Air-Better Life

Globally, 92% of people do not breathe clean air¹. It is estimated that air pollution costs global economy USD 5 trillion every year in welfare costs². Out of the two fastest growing economies in the world which are also worst affected by ambient air pollution, China has made significant progress in recent past while India stands as the most polluted country with average level of air pollution in urban areas at more than six times higher than the safe limit prescribed by the World Health Organisation³. Air pollution is the third biggest health risk in India⁴ and inaction on air pollution is costing Indian economy 8.5% of its gross domestic product in welfare losses and forgone labour.

As per the latest information available from CPCB, there are more than one hundred cities (so called 102 non-attainment cities⁵) in India which do not meet the ambient air quality standards. Recently formulated National Clean Air Programme (NCAP) by the current Government proposes strengthening of air quality monitoring infrastructure in cities and concentrated efforts in 102 non-attainment cities for 20-30% reduction at national level in PM 2.5 or PM 10 concentrations by 2024 by taking 2017 level as the baseline. The accountability of



Source: PopTika / Shutterstock.com

public agencies is found to be a key gap in the NCAP and filling this gap would be essential for effectively enforcing these targets and achieving tangible reductions in air pollution.

CII initiated 'Cleaner Air Better Life' platform with a vision for cleaner air and a better quality of life in Delhi National Capital Region (NCR), in November 2016, when more than 1800 primary schools where shut down in the region due to dangerous level of air pollution. The platform brought different stakeholders together in NCR for designing actionable steps to address four key sectors^{6,7} and galvanised Industry action for biomass management in three rural clusters of Punjab, a major factor for episodic rise of air pollution in Indo-Gangetic Plains. Using behaviour change communication tools and participatory model used for engaging with farmer community, farmers were convinced at the village-level to not

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burn the straw. They were also provided the financial support for filling viability gap on the needed farm tools for sustainable farming (direct reuse of biomass at field) and technical handholding was provided to farmers. As a result, sustainable agricultural practices were adopted across 12,000 acres of farmland, avoiding burning of more than 27,000 tonnes rice straw in 2018.

To accelerate action across sectors in India, CII initiated a national-level forum on air pollution in 2019 for strengthening the 'Cleaner Air Better Life' platform. Under CII4India theme, which guides CII's activities for next three years, air pollution has received a renewed focus for improving quality of life in India by 2022. It is envisaged that strengthening and scaling the 'Cleaner Air Better Life' platform will lead to convergence of ongoing efforts for

> cleaner air in affected urban centres beyond NCR, and demonstration of clean technologies/solutions which can be replicated across urban and rural India.

> Prioritising clean fuel and technologies, which are essential for combatting air pollution, requires overhauling several existing policy and regulatory instruments such as Pollution Under Control, Electricity Grid Code, Coal Allocation, Building Codes & Byelaws, Goods & Services Tax, Emission Norms: DG Set, Inputs Subsidies for Agriculture, Minimum Support Price

(MSP) including national strategy for food security & nutrition etc. Better management of resources (surplus agricultural biomass, municipal solid waste, construction and building materials etc.) are low-hanging fruits for mitigating air pollution but require more fundamental and large-scale change in the ways we consume and produce.

- 1 World Health Organization (2016). Ambient Air Pollution: A Global Assessment of Exposure and Burden of Disease.
- 2 World Bank and the Institute for Health Metrics and Evaluation (IHME) (2016). The Cost of Air Pollution: Strengthening the Economic Case for Action
- 3 Observer Research Foundation (September 2017). Ambient air quality in India and China.
- 4 Institute of Health Metric and Evaluation (IMHE) (2017). Global Burden of Decease (GBD) Study.
- 5 CPCB (2018). List of Non-attainment Cities. December 2018. http://cpcb.nic.in/non-attainment-cities/
- CII-NITI Aayog (2018). Biomass Management Report; Clean Fuel Report; and Clean Transportation Report
 CII-NITI Aayog (Forthcoming, 2019). Clean Industry Report.

ndustry Voices



Biodiversity is a critical requirement for a healthy ecosystem. It is important for organizations to take effective measures to reduce their impact on the environment. Businesses can play a crucial role by adopting policies to tackle socio-environmental challenges and reduce stress on native biodiversity.



Kavinder Singh



A 'Clean and Green is Profitable and Sustainable' business philosophy has led many progressive and major Indian corporates to become more climate resilient. To work towards low carbon economy, a collective and coordinated approach from all stakeholders including Government, MSMEs and SMEs would be a real differentiator in limiting greenhouse gas emissions. The key components of this participatory approach need to be reflected in our national climate change plan and the climate policy must focus on increased investments in research and innovation. It should also ensure availability of low cost finance to enable cutting edge technology experimentation and demonstration for industry and a low carbon economy transition.

Chairman, CII IBBI and MD, Mahindra Holidays & Resort India Limited

Mahendra Singhi Member, CII Climate Change Council and MD and CEO, Dalmia Cement (Bharat) Limited

Climate change, biodiversity and business value chain are interdependent. Businesses should attempt to manage this relationship effectively by adopting responsible practices and endeavour to protect our existing natural habitats.



Anup Mathew Member, CII IBBI and Senior Vice President & Business Head - Godrej Construction, Godrej & Boyce Mfg Co Limited

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